





## Editorial Notes.

### THE CHEMISTS' BALL.

THE Chemists' Ball has not yet outlived the men who first set it rolling, and who are still among its heartiest supporters, but it has lived long enough to become firmly established as an annual event in the Pharmaceutical calendar, and we hope will be a "druggists' sundry" until the dismal day shall come when druggists shall seek science only, and no longer care for lip salve nor for chest protectors. The ball of 1872, the sixth of the series, was in every respect as well arranged as any of its predecessors, and it is no slight compliment to the stewards of an affair like this, to say that though they have conducted six large balls, there has never been the slightest shade of discontent expressed by any visitor, nor has the remotest approach to a complaint ever reached us. Mr. Watson, the Secretary of former years, was unable on this occasion to undertake the duties of that office, but his place was admirably filled by Mr. R. B. Warrick. The presence of the Lord Mayor last year lent an especial *éclat* to the ball on that occasion, and the number of visitors was not quite so large this year as then. Still, there were very nearly 300 ladies and gentlemen, a number amply sufficient to make the evening pass merrily. Mr. Haselden, the President of the Pharmaceutical Society, presided at the supper table, and, in genial sentences, gave the one toast of the evening, "Success to the Chemists' Ball, coupled with the health of the ladies, and God bless them." A responsive cheer, led off by Professor Attfield greeted the toast, and its cordiality did honour to the hearts of those who raised it. Then the music and the dancing began again, and the next day's sun found many a pharmaceutical magnate light in heart though weary in body.

### THE PHARMACEUTICAL EXAMINATIONS.

MR. SIEBOLD has done us the honour to address a few words to us in reply to our criticism of his lecture on the Pharmaceutical Examinations, both of which—lecture and criticism—we published last month. We shall submit without retaliation to the somewhat caustic style in which our unfortunate ignorance of human nature, and of the details of the lecture which we criticised, is referred to, and shall leave the Pharmaceutical body to judge between our views and those of Mr. Siebold. But on one point Mr. Siebold intimates that we diametrically misrepresented his remarks. He says: "You say . . . that I attribute the failures of many of the best men to their nervousness . . . The exact words I used were—'I do not believe that many of the failures alluded to can be attributed to nervousness. . . .'" True, the lecturer did say that, and a little further on, arguing against practical dispensing as a part of the Pharmaceutical Examinations he uses these words:—"Many clever men are rather awkward in the manipulations when they are being watched, and more particularly so, when they work in a strange place and are being watched by an examiner. A slight mishap or accident may thus cause an experienced dispenser to appear deficient, whilst a far less qualified candidate possessed of plenty of self-confidence will probably pass excellently. We generally find the most ignorant to have the highest opinions of themselves, and to be the least nervous, and the most plucky."

These were the sentences which suggested our remarks, and not the one which Mr. Siebold quotes with such satis-

faction. If the most ignorant are the least nervous, what is the evident conclusion? It does seem that the editor had made "himself acquainted with the details of the lecture" better than the author himself.

Our own opinion is certainly that if Mr. Siebold's suggestions were carried into effect the practical character of the Pharmaceutical Examinations would be ruined, and cramming would be far easier than it now is. And we can give rather strong proof that Mr. Siebold is, in a pharmaceutical sense, better than his creed, for it has come to our knowledge from a perfectly independent source, that the two young gentlemen who took first and second prizes in our "Corner for Students" last month, had both been trained in Mr. Siebold's establishment.

### PHARMACEUTICAL DUST AND WATER.

FOR the benefit of our readers we reproduce from the *Pharmaceutical Journal* a suggestion that during the hot and dusty weather pharmacists might save themselves much inconvenience and annoyance by the employment of a solution of deliquescent salts in the place of ordinary water for keeping the floors of their shops damp. This plan is the principle of Cooper's patent for watering streets, and the *Pharmaceutical Journal* states with its usual magnificent indifference when treating of money matters, that in Westminster it has been found that the cost of the salts is paid for by the saving in horse hire, and that a further credit to the good was also effected by the saving of 7,000,000 gallons of water at 9d. per gallon (£262,500!) in the course of a hundred days. If that is true, the metropolitan parishes had better be set to work to clear off the National Debt without further delay. Severe critics might suggest that the editor of the *Pharmaceutical Journal* was confusing in his mind the costly *aqua pura* of the dispensary with the more ordinary liquid which parish vestries are likely to use. The article immediately following that on Dust in our contemporary, bewails the dishonesty of certain literary organs which steal the ideas and facts published in his columns, and make no acknowledgment. We know not who are referred to, but lest there should be any mistake about the matter, we beg to repeat that the extraordinary fact which we have named above is extracted from the *Pharmaceutical Journal*.

### THE NEW YORK COMMISSIONERS OF PHARMACY.

THIS body has issued a report of its proceedings for the last six months of the past year. Six hundred and sixty-six persons, out of over nine hundred candidates, have been licensed, and of these, less than thirty succeeded in passing the examination at the first trial. Egregious and discreditable failures in chemistry, pharmacy, and toxicology, as well as in "doctor's Latin," characterised the large majority who were turned back by the ordeal. Only three out of over seven hundred applicants could read the simplest Latin sentences; but more than this number were familiar with the jargon of the prescription counter. "To express the idea of 'the same,' the word *ejusdem*," says our informant, "was used; and the Commissioners, with apparent satisfaction at the success of the trap, report the results of this test. One clerk, it is stated, replied that in no store where he had been employed had he ever seen or heard of



"infusion of ejusdem." This famous prescription was presented at eighteen drug stores in the most populous part of Broadway, and in each the same answer as the above was returned.

### METHYLATED SPIRIT.

From the supplement to the 14th Report of the Commissioners of her Majesty's Inland Revenue, recently issued, we learn that only one instance has occurred of the illegal use of methylated spirit in the preparation of tinctures, the substance so prepared being laudanum, which from its peculiar odour, affords great facilities for the utilisation of methylated spirit. Thirteen samples sold as "finish" were examined by the principal of the laboratory, two of which consisted of methylated spirit only, and seven of the remainder contained much less than the required proportion of gum-resin. In the latter part of the year an application was made by some of the largest methylated spirit-makers to be allowed to use common resin in the preparation of "finish" as it is much cheaper than seed-lac, shellac, or sandarach. As common resin is almost a pure resin, and equally as effective as the other substance named, the request was acceded to. As many as 302 samples, representing 69,830 gallons of wood spirit for methylating, have been examined, two of which representing 334 gallons, were below the required strength of 60 per cent. over proof.

### A MINISTER OF COMMERCE.

THIS world will be an inconceivably wretched place to live in when everyone has obtained all he or she wants, and when there is nothing left to agitate for. Signs of the future dreariness are but too evident. Professional agitators have seen with dismay one after another of their favourite hobbies snatched from under them by Mr. Gladstone's over-active ministry. What would not many of them give for a little bit of real old-fashioned tyranny to protest against. But the approach of the era of universal contentment is more plainly manifested if we notice the hopelessly stupid objects for which in the absence of more worthy ones, restless minds are now compelled to clamour. Some dozen theorists or less have fixed their hearts on the appointment of a Minister of Commerce, and at the London Institution a few nights ago they were given the opportunity of a discussion under the leadership of Mr. Hyde Clarke. We may say in passing, that these discussions at the London Institution have been established this winter with the object of bringing forward especially commercial or "City" subjects, in the same way as at the popular evening meetings of the Society of Arts, social questions are usually considered. The idea is an excellent one and may prove successful, but it certainly will not, unless more practical men can be induced to come forward than Mr. Hyde Clarke. City men will never care to listen to such loose and rambling statements as he and a few of his friends discoursed to them on February 1st. Mr. Clarke thinks we should have a Minister of Commerce, first, because almost every other country has established such a functionary, and secondly, because the commerce of Great Britain has grown to an extent far exceeding that of any other country—arguments which cut each other up, and which, if they prove anything at all, suggest exactly the reverse of the conclusions which Mr. Clarke draws from them. Mr. P. L. Simmonds thinks we want a Minister of Commerce who would give proper encouragement to the establishment of museums of natural productions. And Mr. Holl, who was stated at the meeting to represent forty-five chambers of commerce, thinks it an abundantly sufficient argument for a Minister of Commerce to say that he is in favour of the appointment. As a matter of fact

commercial men have no wish to re-enact the old fable of the trees of the field which gathered themselves together and made a king to rule over themselves. They might have to put themselves under the shadow of the bramble, and even if the olive or the fig-tree would consent to accept the office, such a shadow might not be an unmixed blessing. We have a President of the Board of Trade who is actually the head of a mere statistical office, but whose functions, limited as they are, are probably quite as extended as could be desirable. Mr. Bright described his position as an official with no duties, and the Government seems to have recognised the accuracy of that description by appointing Mr. Chichester Fortescue to it. We do hope, however, that the day is far distant when British merchants and British manufacturers will ever look for any Government aid to their own energies, for such a day will assuredly be the first of a series which shall result in the decadence of our mighty commerce.

### FIRES AMONGST CHEMISTS AND DRUGGISTS.

From the report of the Chief Officer of the Metropolitan Fire Brigade, we learn how the chemists and druggists of London have fared in respect to fires during the past year. According to the statistics of Captain Shaw, there have only been nine cases of fire during 1871 amongst metropolitan chemists and druggists, and of these but one was the cause of any specially serious damage. Notwithstanding that the trade has been so fortunate in this respect, it is interesting to note the causes of the nine fires which occurred, and which are thus explained to have arisen:—Overheat of boiler, 1; essence of tar boiling over, 1; camphor bottle bursting, 1; candle, 1; boiling chemicals, 1; spark from furnace fire, 1; overheat of steam-pipe, 1; leakage of carbonyl, 1; unknown, 1. From this synopsis it will be perceived that these conflagrations have arisen from no one particular cause more than another, and that the owners of chemists' shops have clearly not been in any way negligent in taking every preventible means to obviate the occurrence of fires on their premises. Apart, however, from chemists and druggists, properly so-called, Captain Shaw states that eight fires occurred during the past year amongst "apothecaries and dealers in drugs, but where no chemical works are carried on." Of these eight fires none were specially destructive, and their origin is explained as follows:—Escape of gas, 2; light thrown down, 2; candle, 1; spark from fire, 1; unknown, 1. Amongst the druggists' sundrymen, two fires occurred, one of which arose from the effects of smoking tobacco. There were also but two cases of fire amongst the wholesale druggists, and the cause of one of these was the experimenting with some chemicals. Comparing the statistics of the fires in the chemists' and drug trade with those of other sections of retail trade, it is satisfactory to find that the members of our trade come off from the comparison most successfully. While there were only nine cases of fire, as we have stated, amongst the chemists and druggists, there were no less than thirty-five amongst oil and colourmen.

WE have been shown a very effective counter-case of Mr. Granger's Marking Ink, which would present an attractive appearance on any chemist's counter. A variety of boxes of marking ink, got up in handsome and novel styles, is displayed, and on a tablet at the back is an enlarged reproduction of the grotesque design which appears in our advertisement pages, and which of itself compels attention. We are informed that Messrs. Maw have some of these cases on view, and Mr. Bell, of 22, Baker-street, W.C., is the London agent.



## THE PRELIMINARY EXAMINATION.

BY JOSEPH INCE.

[An apology is made for the length of this communication. It has been thought best to present our young readers, for whom this article is specially written, with full particulars.]

WELL do I remember when I passed my own Preliminary. Three candidates attended—Thomas Savory, since dead, his brother, and myself. We were presented with a book descriptive of Adam and Eve and other Scriptural characters. It was our duty to translate into decent English, the wicked conduct of Cain respecting his brother Abel. We were all three conscious that we could have written the narrative ourselves in better Latin, and with less flavour of dog. Then the examiner, who, happily for us all, still retains his seat at the Board, expressed a hope that my Father was getting better, and a regret that he was so troubled with asthma. We shook hands, and this is the faithful record of my first examination.

Afterwards, I myself became an examiner, and I had the Preliminary to conduct. About two dozen young gentlemen sat round a table, each read one sentence of "Cæsar de Bello Gallico," and declined one substantive, or gave the chief conjugation of one verb. Two questions in arithmetic followed, and ten lines of composition, the subject being selected by the candidate.

Next came an alteration, legal and compulsory. The Privy Council thought that a pharmacist should be able to cipher, read, and write, and know so much Latin as to enable him to read prescriptions, which he has occasionally to dispense. This examination, so wonderfully called in question, I am now going to describe. I consider its arrangements admirable and sufficient. There are three sections: I. Latin, divided into three parts—(a) two passages from Cæsar, (b) two from pharmaceutical Latin, and (c) a few ordinary grammar questions; II. Arithmetic, elementary sums extending as far as decimal fractions; III. English, including grammar questions and composition.

Let me stop for a moment here, and ask any father or mother whether in their heart of hearts they would desire their son to know less? What consolation would he probably be to them if such were the case? I reprint (by the courtesy of the Editor of this journal) two examinations in full, for I am exceedingly anxious to talk reality and not platitudes and I will do all I can to remove seeming difficulties.

NOTICE.—In framing Answers, Candidates should not enlarge upon the Questions, but should confine themselves to giving, as briefly and clearly as they can, the information required.

## PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

## FIRST OR PRELIMINARY EXAMINATION.

October 2, 1871.

Time allowed: Three Hours.

## LATIN.

Translate into English two or more of the following sentences:—

1. Quam ea ita sint, tamen, si obsides ab iis sibi dentur, ut ea, quæ polliceantur, facturos intelligat, et si Aeduis de injuriis, quas ipsis sociisque eorum intulerint, item si Allogobis satisfaciant, sese cum iis pacem esse facturum.
2. Biduo post, Ariovistus ad Cæsarem legatos mittit, velle de his rebus, quæ inter eos agi cæpta, neque perfectæ essent, agere cum eo: uti aut iterum colloquio diem constitueret; aut si id minus vellet, ex suis legatis aliquem admitteret.
3. Coque Coecum in Aquâ per quartam horæ partem in se operto, subinde movens, tum cola, et perice sicut de rupo Althææ præceptum est

4. Ex his fiat haustus, summo mane deglutiendus. Repeatatur idem tertio quoque die.

5. Give the genitive endings, singular number, of the five declensions.

6. How are noun-adjectives of three articles declined? Decline one.

7. State to which conjugation each of the following verbs belong:—mitto, repeto, moveo, constituo.

8. What case do the following prepositions take after them?—absque, cum, pro, sine. Illustrate by examples.

9. What cases do Gerunds and Supines govern? Furnish examples.

## ARITHMETIC.

10. A was born 34 years after B.; how old was B. when A. was 17? and how old will A. be when B. is 70?

11. The planet Mercury revolves round the sun in 88 days; how many revolutions will it perform in 17 years and 219 days, reckoning 365 days to the year?

12. Reduce  $\frac{7}{8}$  of a cwt. to its proper quantity.

13. From  $5\frac{2}{3}$  take  $\frac{9}{10}$ .

14. Add  $3275 + 27514 + 1005 + 725 + 732$ .

## ENGLISH.

15. Of what does Syntax treat?

16. Explain the difference between Simple and Compound Sentences, and furnish examples.

17. Name several nouns which are irregular in the formation of their plural.

18. Correct the following:—Flattery cannot hurt none, but those who it is agreeable to.

19. Parse the following:—Industry is the road to wealth, and virtue to happiness.

20. Write from fifteen to twenty-five lines upon one only of the following subjects:—

A. The Force of Example.

B. True Courage.

C. The Power of Hope.

## II.

## THE RECENT EXAMINATION.

## FIRST OR PRELIMINARY EXAMINATION.

January 1, 1872.

Time allowed: Three Hours.

## LATIN.

Translate into English two at least of the following sentences:—

1. Tum demum Liscus, oratione Cæsaris adductus, quod antea tacuerat, proponit: esse nonnullos, quorum auctoritas apud plebem plurimum valeat, qui privatim plus possint, quam ipsi magistratus.

2. Quibus rebus Cæsar, vehementer commotus, maturandum sibi existimavit, ne, si nova manus Suevorum cum veteribus copiis Ariovisti sese conjunxisset, minus facile resisti posset. Itaque re frumentariâ, quam celerrimè potuit, comparatâ, magnis itineribus ad Ariovistum contendit.

3. Sesquioxidum Acido misce, et balneo arenoso digere, subinde agitans, donec liquetur. Deinde liquori frige facto spiritum adijce et cola.

4. Misce, et applicetur paululum auri affectu omni nocte cum gossipio.

5. Name the cases of neuter nouns, the terminations of which are alike.

6. Give the number and case of each of the following nouns, and state the declension to which they severally belong: Plebem, Suevorum, Copiis, Re, Balneo, Spiritum, Auri.

7. How do adverbs derived from adjectives form their degrees of comparison? Give examples.

8. The Verb has two parts—1, Finite; 2, Infinite. Name the moods and tenses of the Finite.

9. To what questions does the Ablative of Time answer? Give examples in Latin.

## ARITHMETIC.

10. An army consisting of 20,000 men took a city, and plundered it of £12,000. What was each man's share, the whole being equally divided?

11. If 50 men can do a piece of work in 100 days, working



8 hours per day, in what time will 120 men do it, working 6 hours per day?

12. Reduce  $\frac{137}{19}$  to a simple fraction.

13. Multiply  $\frac{3}{8}$  by  $\frac{2}{3}$  of  $\frac{4}{5}$  of  $\frac{1}{2}$ .

14. Divide 125 by .1045.

#### ENGLISH.

15. Explain the meaning of an Abstract Noun.

16. What is a Synonym? Give one example.

17. Give the Degrees of Comparison of the following words:—good, bad, much, little, beautiful.

18. Why are Auxiliary Verbs employed?

19. Parse the following:—On that night he recognised his friend.

20. Write from fifteen to twenty lines upon one only of the following subjects:—

A. Sympathy.

B. Winter Amusements.

C. The Crystal Palace.

The first specimen of these examinations is given as an average sample of the whole, being neither too difficult nor too easy. The arithmetic was admirably accomplished; the English was deplorable. The second specimen is the one last held in January. The Latin section appears to me to be arranged in a perfect manner, and the first two sentences were generally translated so as to satisfy John Conington himself. The arithmetic and English were well diluted. Arithmetic, which is always the fire-escape, failed completely; and yet the English was not creditable.

Here is a typical specimen of composition—no one need be offended, as it is not a reprint of any particular essay, though it closely resembles about two or three hundred others.

#### “THE POWER OF HOPE.”

“Of all the powers the power of hope is the most powerful. A man who has tumbled overboard hopes to have a rope sent out, and hopes to be saved. A man whose house is burning hopes not to be burnt in it. And I hope to pass this examination, and I hope the examiners will look over my faults. I would say more about the power of hope, but the time is up.”

Here is much power and a good deal of hope, but not one original idea.

Latin is not, in my opinion, the chief stumbling-block. I say it consists in the utterly defective character of preliminary home English education. The mother, not even on the blessed Sunday, reads the Bible to her child; never makes him familiar with those old-world episodes conveyed in all the glory of that marvellous diction which has stamped the character of the language which we speak; never teaches him to weave those exquisite sacred stories into narrative, and so wake up within him the intellectual conscience which is the dawn of the intellectual life.

In many a house fairy-land has no existence. Cinderella never loses her tiny slipper, nor does the Prince become invisible; in many a dark domicile Peter Parley has never travelled, Mrs. Barbauld never sung her delicious hymns, nor has Mrs. Gatty unfolded in lovely sentences her Parables from Nature. Let me ask you, fathers and mothers, if it be not an unrighteous thing to shut out your children from such delights? Heaven forgive me if I am saying anything sharp. I wish solely to speak for you and yours.

Lastly, I subjoin a sentence, the insertion of which I must explain.

#### III.

April 3, 1871.

Suam innocentiam perpetuam vitam, felicitatem Helvetiorum bello, esso perspectum. Itaque se, quod in longiore diem

collaturus esset, representaturum, et proximâ nocte de quartâ vigiliâ castrâ moturum, ut quam primùm intelligere posset utrum apud eos pudor atque officium aut timor valeret. Quod si præterea nemo sequatur, tamen se solâ decimâ legione iturum de quâ non dubitaret, sihique eam prætoriam cohortem futuram. Huic legioni Cæsar et indulserat præcipuè et propter virtutem confidebat maxime.

This last separate Latin quotation is added because I think Cæsar, though at present stipulated for by authority, is a bad hook for a student, since it teaches Cæsarism and not Latin; anxious to ascertain the fact, a “speech sentence” was inserted, and, as was anticipated, it turned out a blank. No candidate was injured, as full value was awarded to other questions. I mention this because Cæsaric construction has been fully explained already in the pages of the CHEMIST AND DRUGGIST (p. 151, last volume).

To aid students in their preliminary work, the following hints were drawn up by Mr. Haselden.\*

June 10, 1871.

To undergo an examination, it will be admitted, is not generally one of the most agreeable ordeals; and if the person examined be inexperienced and the surrounding circumstances be strange, the resulting embarrassment doubtless sometimes prevents the candidate from doing full justice to his attainments. This would be very likely to occur in such an examination as the Preliminary Examination of the Pharmaceutical Society, where a large proportion of the persons examined are young, and comparatively unaccustomed to judge and act for themselves. To assist such in economizing the time at their disposal by proceeding methodically to their work, the following plain suggestions for avoiding the errors which the candidates most frequently fall into, have been prepared. We hope that they will be of service, and prove the truth of the adage,—

“A word spoken in due season, how good is it!”

1. Do the work in the order set down, not beginning with English, running confusedly into arithmetic and Latin, and then finishing with English.

2. Do not throw away time by writing out the questions before the answers; put the numbers only, distinctly and carefully, leaving a small space between each answer.

3. Translate all the Latin, if it can be done readily, without taking up too much time, or such passages only as can be done.

4. Read the questions carefully, and do not give a gender when asked for a case.

5. When particular case-endings of certain nouns are required, do not decline one noun entirely.

6. When Latin examples are asked for, give them in that language, and not in English.

7. Do not say objective case in Latin, or accusative in English.

8. In arithmetic, endeavour to let the working of the sums appear, keep them well apart; when the answers only are put down, let them be clear and separate; let the scribbling-papers, showing the working, accompany the answers, and do not lose time by carrying decimals *ad infinitum*.

9. In the English let the composition be written, if possible, fairly off at first, so as not to spend time in writing the same twice; attend to the orthography; select one subject and keep to it, not doing five or six lines upon two subjects.

10. All the previous questions being published, work them out, and ask some kind friend to examine, and, if necessary, correct the answers.

11. Each candidate should state his age as indicated.

12. By endeavouring to carry out these simple directions candidates will not so frequently finish with “no more time.”

Still, as failures did not diminish, the Board of Examiners brought out a special report, and it is here presented:—



[THIS IS OFFICIAL.]

SPECIAL REPORT OF THE BOARD OF EXAMINERS ON THE  
PRELIMINARY EXAMINATION.

December 9, 1871.

Rather more than three years have elapsed since the passing of the Pharmacy Act, 1868, which rendered special examinations, and thereby education, compulsory upon all intending to practise pharmacy.

There are three stages in these examinations; the First or Preliminary, for those who at the passing of the Act were apprentices or students, or, if serving as assistants, were under twenty-one years of age, and for all who may hereafter enter the business; secondly, the Minor examination, for those who intend taking up only the title of chemist and druggist; and thirdly, the Major, for those who desire to obtain the more honourable one of Pharmaceutical Chemist.

It is to the first of these, or the Preliminary examination, that attention is now directed.

The Bye-laws of the Pharmaceutical Society, section x., paragraph 12, describe the Preliminary examination as being a test of knowledge of the Latin language, English grammar, composition and arithmetic; and the Board of Examiners has defined the extent to which the examination in each subject shall be carried, so that its exact requirements may be understood; it is as follows:—

"The examination is a written one, and comprises—

"*Latin: Translation into English of a paragraph from the first book of Cæsar (De Bello Gallico), or a passage from each of the following works:—Pereira's 'Selecta & Præscriptis,' and the last edition (Latin) of the London Pharmacopæia.*

"*Latin Grammar.*

"*English Grammar, Composition.*

"*The first four rules of Arithmetic, simple and compound, vulgar fractions and decimals.*

"Certificates of having passed the local examinations of the Universities of Oxford, Cambridge, or Durham, the examination of the College of Preceptors, or those of any legally constituted examining body previously approved by the Council, *provided Latin and Arithmetic are included in the subjects, are accepted in lieu of this examination.*"

It is with unfeigned regret that the Board is obliged to confess that replies are no better, while the percentage of failures remains the same.

To alter this state of things, alike painful to the Board and disheartening to the candidates, a review of the past is now contributed.

Taking the numbers of four examinations, it will be found that out of 1,101 candidates, 714 passed and 387 failed, an average with a trifle over 35 per cent. of failures. The highest number of any one of those who passed is found to be 285 out of 300, and the lowest, 150, just sufficient to pass. In order that a correct opinion of the cause of failure may be formed, it may be as well to give further particulars.

In each subject it has happened upon several occasions that no mark has been given; 3, 4 and 5 have been the lowest numbers given out of 100 for Latin; 5, 8 and 10 for English; and 5, 8 and 10 for Arithmetic. This has occurred more frequently in Latin and English than in Arithmetic. In the four examinations of 1871, 170 candidates obtained less than one-fourth the number of marks in Latin, 64 in English, and 44 in Arithmetic; 362 less than half in Latin, 275 in English, and 204 in Arithmetic. Thus, it is clearly shown by these numbers that Latin and English, especially Latin, are the stumbling-blocks, and more particularly Latin Grammar, for where that is deficient, failure in English Grammar and Composition is to be expected. Arithmetic, though occasionally at fault, cannot be said to be deficient; on the contrary, in many cases, it has been the means of passing candidates, the large number of marks obtained for it making up for the deficiency in the other subjects.

A few samples of free translations from the Latin may be given without offence:—

Quod reliquum est balneo aquoso ad idoneam crassitudinem consume—translated, "what remains is balneum water to be taken at the same time to-morrow;" quæta quæque horâ—

frequently rendered "every fourth part of an hour;" lactic vaccini recentis—recent vaccination being calmer; summo mane deglutiendus—to be taken in the morning when the pain is raging; et per se sicut de syrupo althææ præceptum est—and pass through tow upon syrupus althææ and collect the precipitate; fiat haustus, mane deglutiendus—make a draught to be taken as a jelly; "coccum" is construed "cocoa." [Or this—Applicetur paululum auri affectæ omni nocte cum gossipio. A little gold to be applied every night with conversation.]

There is evidence here of great want of education, besides guesswork. It would be better to give no answer or no translation than one which is destitute of sense. These examples are from pharmaceutical Latin. Cæsar would furnish equally inaccurate ones. To the questions in grammar the replies are little better as a rule, and often given without the least bearing upon the question. Arithmetic is nearly always well done, but the English composition generally falls deplorably short. The real nature of the subject selected is often misunderstood; there is an absence of style,—a want of accuracy of expression; the illustrations are inapt, the words badly selected and too frequently repeated; the construction of sentences is imperfect, while the connection between one sentence and another is obscure, the spelling is faulty, and the commonest rules of syntax are disregarded.

How can this be altered? Two classes have to be considered, those already in the business and those about to enter it. Of the former there are three divisions, viz., those apprentices of one, two, three, or four years' standing; these who were apprentices when the Act was passed and have since become assistants; and those assistants who neglected registering at the time proper to qualify them for passing the Modified examination. Where elementary education has been neglected the case is difficult; where good, a little systematic persevering study will recover much that has been lost. In either case, they should work with hearty goodwill at the grammar and medical Latin, with which, from their business experience, many of these candidates, under ordinary circumstances, should be well acquainted. For apprentices of any number of years' standing, the early education being good, a little perseverance should set all right; but for those who never have been properly educated, there can be but one course—go to school as soon as possible. But how is this to be accomplished? Employers must aid in this good, this essential work. They can materially assist, and in this way: let some time, either morning or evening, be devoted to study; do not say there is no time, but make it.

In every town are to be found teachers obtainable at a moderate cost quite equal to the task. Those gentlemen who, knowing what was passing respecting pharmaceutical education and examinations during the last ten years, yet took apprentices without reference to the amount of education they had received, should help in this great work.

It has been clearly shown that Latin is the first desideratum; let its study be raised to a proper standard, and English will soon follow in the same direction. But, let what may be done, it must be with a will and determination to conquer, and that can only be accomplished by industry, attention, and perseverance.

Thus far concerning the apprentices and assistants above alluded to who are actually in the business, having regular business duties to perform, who must, if they are to commence business as chemists and druggists, pass the Preliminary examination, and after that, in due course, the Minor.

For them a certain amount of sympathy is felt, and for them masters are solicited to give, as they most conveniently can, time for study and help in carrying it through.

There is the other class which claims at the present time some attention,—the class of future apprentices.

It has lately been put forward that the Preliminary should be passed before indentures of apprenticeship are signed; be it so. The Board is of opinion that this point cannot be too strongly impressed upon parents who may be desirous of placing their sons as apprentices to chemists and druggists or pharmacists, nor upon those gentlemen who undertake the responsibility of having apprentices, for, whatever may have been in the past, it is clear that in the future they should pass either the Preliminary of the Pharma-



ceutical Society or the Local Examination of one of the Universities or other approved examining body before indentures are signed; this accomplished, a source of anxiety, alike to pupils, parents and masters, would be successfully dealt with, and the apprentice would be able to devote mind and body in acquiring a just and proper knowledge of the business, and becoming in every respect a better and more serviceable apprentice to his master, who, at the same time, would feel that he was instructing one in whose educational attainments he could place confidence.

In drawing up this report—setting forth the candidates' weak points and suggesting a possible way of overcoming their difficulties—but one spirit has pervaded the Board and induced it to take this course,—an honest desire to help those who evidently stand in need of it, and at the same time draw attention to that which is most desirable for the future. Although the Board looks upon the number of failures as large, it is believed that other Examining Boards experience the same results; but the Board is most desirous of seeing a reduction in the number of failures.

And now, my young reader, pardon me this long—too long—dissertation. Do not be angry with my sentences, for you will not find in them a trace of either cynicism or satire. Let us talk together for a moment: sit down, and listen to what I say. Do you really think that this Preliminary Examination is difficult? Does it contain anything that anybody should not know, whether engaged in Pharmacy or otherwise? Would you not rather be the friend and companion—the intimate associate of the host amongst ourselves of cultivated intelligence, rather than grow up to be a petty tradesman, and whine about a *status*? The way to obtain a *status* is to have one. No living man can treat other than as an equal one who knows Latin, Arithmetic, and English Literature. Never forget the splendid historical anecdote. When the Pope was somewhat dilatory in crowning Napoleon, that exemplary individual crowned himself. Go and do likewise.

I ask you in my own name, and in that of our Society; I ask you in the name of the men who constitute the British Pharmaceutical Conference, to enter the charmed circle of the intellectual life. This I promise, that you will find it a spring of perpetual pleasure; an abundant, never-ending source of contentment. It will throw round you

the halo of its quiet happiness, whatever you may think or do. It will gild your darkest cloud, and lighten your heaviest sorrow. Years hence, when you have grown grey in its blessedness and enjoyment, you will not regret that this journal left its usual track in order to say something about the Preliminary Examination.

Last month there was a notice in the CHEMIST AND DRUGGIST respecting some books that might be consulted with advantage by the Preliminary Student—it is here reprinted.

PRELIMINARY EXAMINATION.—We are asked so frequently to give advice respecting desirable books to aid neglected home and early teaching that we are compelled to answer in some way. We entirely object to recommend any particular manual, as we deplore the notion that a certain number of pages, learnt by heart from any handbook, shall be accepted in lieu of practical knowledge. Yet the following list (without disparagement to others) will be found of service:—

The "Latin Primer," now almost universally used, many of the standard exercise books having been adapted to its rules.

Dr. William Smith's "First Latin Course" (Murray) is very generally selected for beginners. The later editions have, as an appendix, the Accidence arranged as in the Public School Latin Primer.

Mr. H. Musgrave Wilkin's "Latin Prose Exercises." There are two books of them specially adapted to the Syntax of the Public School Latin Primer.

Arnold's "Historiæ Antiquæ Epitomæ."

So many English Grammars and treatises on Composition exist, that it is difficult to decide in their favour.

Morell's "English Grammar and Analysis" is good. Excellent exercises are attached. The Introduction is called, "Essentials of English Grammar," and is quite elementary.

Latham's "English Grammar," a delightful book, is too advanced, and hardly as well adapted for preliminary studies.

With regard to Arithmetic introductions abound. Colenso is a favourite, but the name of the rest is legion. From the above list probably the apprentice or assistant may find his wants supplied.

The annexed schedule will give a perfect explanation of the causes of failure and success.

### PRELIMINARY EXAMINATIONS, 1871.

#### MARKS.

Date of Examination.	Total No. of Candidates.	No. passed.	No. failed.	These particulars refer to Candidates who have passed.								These particulars refer to Candidates who have failed.							
				Highest Total.	Lowest Total.	Highest in Latin.	Lowest in Latin.	Highest in English.	Lowest in English.	Highest in Arithmetic.	Lowest in Arithmetic.	Highest Total.	Lowest Total.	Highest in Latin.	Lowest in Latin.	Highest in English.	Lowest in English.	Highest in Arithmetic.	Lowest in Arithmetic.
871. January .. ..	238	210	88	257	150	93	25	100	25	100	25	*167	35	67	10	73	10	100	10
April .. ..	294	165	129	285	150	100	25	100	25	103	25	*189	30	75	3	85	20	95	2
July .. ..	287	199	88	252	150	81	25	82	25	100	25	*196	47	76	10	63	5	100	10
October .. ..	222	140	82	247	150	75	25	90	30	100	45	*160	20	55	4	66	8	91	5
	1191	714	387	1041	600	349	100	372	105	400	120	712	132	272	27	287	43	386	33

\* Under one-fourth in Latin.

N.B.—In each month, and in each subject, instances have occurred in which no marks have been awarded; these have not, however, been taken into consideration in giving the "lowest No. of marks."

	Jan.	April.	July.	Oct.	Total.		Jan.	April.	July.	Oct.	Total.
Under one-fourth in Latin .. ..	30	67	27	46	170	Under one-half in Latin .. ..	83	124	74	81	362
"    English .. ..	13	8	28	15	64	"    English .. ..	57	68	81	69	275
"    Arithmetic .. ..	19	14	5	6	44	"    Arithmetic .. ..	53	80	35	36	204



## AGES.

Age of Candidates.	No. passed at each age.		January.		April.		July.		October.	
	No. passed at each age.	No. failed at each age.	Passed.	Failed.	Passed.	Failed.	Passed.	Failed.	Passed.	Failed.
13	2	..	..	..	..	..	..	..	2	..
14	19	9	..	..	..	..	..	..	5	4
15	59	33	14	..	12	9	21	11	12	6
16	110	55	34	12	26	21	26	14	24	8
17	110	69	38	14	23	25	33	11	16	12
18	91	50	18	15	29	13	27	10	17	12
19	79	67	24	15	19	26	21	11	15	15
20	77	32	28	8	13	7	15	11	21	6
21	55	31	18	5	15	9	10	9	12	8
22	46	21	10	3	10	9	19	4	7	5
23	26	11	8	4	6	2	10	3	2	12
24	14	5	3	1	3	2	4	1	4	1
25	8	3	2	..	1	1	6	..	..	2
26	2	1	..	1	..	1	1	..	..	..
27	4	1	..	..	2	1	1	..	1	..
28	4	..	1	..	..	..	3	..	..	..
29	..	4	..	3	..	1	..	..	..	..
30	2	1	..	..	..	1	1	..	1	..
33	1	..	1	..	..	..	..	..	..	..
35	..	..	1	..	1	..	..	..	..	..
38	1	..	1	..	..	..	..	..	..	..
no age	2	2	1	1	..	..	..	..	1	1

## CIVIL SERVICE CO-OPERATIVE STORES.

(BY OUR OWN REPORTER.)

A DEPUTATION, appointed by the National Chamber of Trade, had an interview with the Right Hon. Robert Lowe, M.P. (Chancellor of the Exchequer), on Friday, February 9th. Among the gentlemen composing the deputation were Messrs. A. B. Daniell, Gotto, Jones (jeweller), Dickenson (chemist), T. A. Simpson, H. J. Copeland, Slack, Savory (chemist), R. M. Curtis, Keed, Dyer, and Arthur à Beckett, Secretary to the National Chamber of Trade. Mr. Lowe was accompanied by Sir William Stevenson, Chairman of the Board of Inland Revenue.

Mr. T. CHAMBERS, Q.C., M.P., introduced the deputation, and remarked that the gentlemen who would lay their case before the Chancellor of the Exchequer were representatives of a large number of the commercial men of the metropolis, chiefly retail, who were seriously injured by the action of many of Her Majesty's civil servants, who entered into competition with them. He (Mr. Chambers) did not say that the establishment and conduct of these co-operative stores might not be legal, but he thought it very doubtful if they were strictly legitimate. There were certain aspects of the case which the gentlemen present wished to bring under the notice of the Chancellor of the Exchequer.

Mr. ARTHUR à BECKETT then read a statement which had been drawn up. It first referred to the stores in Monkwell-street, which were registered under the Friendly Societies Act, an Act intended to be of service to the poor and necessitous. In 1871 the business transacted by these stores amounted to £208,000 in groceries and £101,000 in fancy articles, the latter being almost exclusively articles of luxury. Every afternoon carriages were to be seen in the street, and there was ample evidence that the stores supplied the upper and wealthy classes, and not the poor and necessitous. Some amusement was occasioned by Mr. Lowe asking where was Monkwell-street, to which inquiry he received the prompt reply from a gentleman in the room that it was near Whitecross-street. The statement then proceeded to say that these stores were exempt from income tax, and thus the revenue was defrauded, and other tradesmen were put at an unfair advantage. This assertion was emphatically contradicted by Sir William Stevenson, who asserted that income tax was assessed on and paid by the Civil Service stores, as by every other company. The names and official appointments were next given of those gentlemen who were directors of the Monkwell-street and Haymarket stores, and the amount of salary received therefrom, varying from £100 to £600, was named in each case. Furthermore, it was

urged that these Civil servants had opportunities of obtaining special information from the departments in which they were engaged, as for instance in the Board of Trade, the Army and Navy Contract Departments, etc., which they might and did use to their own advantage as buyers for the stores. The danger of permitting such conduct was illustrated by reference to the well-known case of Mr. Edwards, who though official assignee in the London Court of Bankruptcy, was permitted to hold a responsible position in the employment of Overend and Gurney. It was thought that the whole time of the Civil servants should be given to the State. The War Office, some three or four years ago, had issued a memorandum to the effect that gentlemen in that office could not be permitted to accept agencies nor to engage in any trade or profession, without the consent of the heads of their departments under pain of dismissal. Mr. Lowe here intimated his ignorance of this memorandum, or of any other which prevented Civil servants from thus engaging in trade. The statement concluded by pointing out that Civil servants were already paid higher salaries than mercantile clerks, and the result of their unfair competition with the trading classes was a wide-spread discontent.

At the conclusion of this paper, Mr. Lowe asked what it was that the deputation wished him to do?

Mr. A. B. DANIELL replied that they wished him to cause inquiry to be made into the subject, and if possible that he would ultimately forbid this trading on the part of Civil servants. The tradesmen of London had no wish to interfere with legitimate free trade, but he (Mr. Daniell) regarded it as opposed to the principles of free trade that Government servants should be paid sufficient salaries for the work they did for the State, and that they should also have the opportunity of supplementing it by earning perhaps an additional £600. He presumed that Government would not take into their employment men who were already engaged in wholesale or retail business, and he submitted that on the same principle they should refuse to allow those already employed to undertake such business. If the Civil servants were underpaid, pay them more, but do not permit them to use time which ought to be given to the service of the State for other purposes. He himself was an income tax commissioner, and in that capacity he knew that great injury had been inflicted on many tradesmen.

Mr. Lowe remarked that he supposed if those tradesmen paid less income tax the Civil Service stores paid more, and therefore, he presumed, the revenue did not suffer.

Mr. DANIELL said this was an error, because the stores sold goods at such a small profit that tradesmen were quite unable to compete with them.

Mr. GOTTO said that when the stores were first established their profits had been 10 per cent., now they were 4½ per cent.

Mr. JONES said that the system of trading adopted by the Civil servants might be regarded as virtually a breach of contract. Some years ago Parliament had investigated the whole subject of the Civil Service, and had arranged the salaries of all Government servants on an equitable basis. If it could be shown that the cost of living now demanded a larger salary for the position which Civil servants should occupy, let them appeal to Parliament for higher salaries. He (the speaker) would remind the Chancellor of the Exchequer that the trading classes of this country had been of late years most unmercifully burdened by taxation. He did not know who was primarily responsible for it.

Mr. Lowe deprecated the insinuation, remarking that he was merely the man who received the consequent abuse.

Mr. JONES proceeded to show that the Civil servants interfered with the traders because they had so much leisure time. Their average hours of labour were 4½ per diem. If they worked for eight hours a day they would be less likely to do mischief. As a watchmaker, he paid 46s. a year for a licence. He was informed that these stores were exempt. (This statement was contradicted by Sir William Stevenson.) The Monkwell-street stores not being a partnership in the usual sense should pay for as many licences as there were associates. It was an unfair thing that men supported by our earnings until they had learned their business, and supported by pensions afterwards, should band themselves together to injure us at the time when they should be engaged in our service. Mr. Jones also spoke of the social injury which would result from the extension of the principle. If there became fewer retailers, there would be fewer store-



houses, fewer factories. There would be but few masters, and a multitude of servants; and thus energy and ability would be at a discount.

The Hon. ARTHUR KINNAIRD, M.P., then referred to a remark that had fallen from Mr. Lowe to the effect that he was not aware of any regulations in force to prevent the Civil servants from thus transacting business. Mr. Kinnaird said he had been in Parliament a great many years, and whether there was a law or not to prevent Civil servants from engaging in trade, there was certainly an honourable understanding that they should not do so. In his own bank he would certainly not permit his clerks to carry on other business, and he thought the State had the right to say the same.

Mr. T. A. SIMPSON would not deny but that it might be legitimate if the Civil servants merely combined for mutual supply, but the objection was that they had made a business to supply all the wealthy classes. He hoped an inquiry would be instituted, and he was confident that a system of gross corruption would be disclosed. The Civil servants attended to the stores instead of to their proper duty, and he believed he was in a position to prove that such was the case.

Sir WILLIAM STEVENSON remarked that in his department that would be impossible, and he thought it would be also in other Government offices.

Mr. SIMPSON then alluded to a Mr. Hills of the Post-office, pensioned with £560 a year, and then engaging in these stores to do all the injury in his power to those who had to pay that pension.

Mr. LOWE said a pensioned servant at all events was perfectly justified in undertaking any business. It might be wrong to pay pensions, but that was not the point. The strong case for the traders was that Civil servants carried on business while they were actually in Government employ.

Mr. SIMPSON further said that servants in the Excise were bound by their oath of office not to buy or sell any excisable articles; that a regulation to that effect had been made many years ago.

Mr. LOWE and Sir WILLIAM STEVENSON both expressed their ignorance of such a regulation.

Mr. LOWE commenced his reply by observing that he thought there was no doubt that one of the Civil Service stores had taken unfair advantage of the Friendly Societies Act. That Act was very loosely drawn, or it would not have admitted such an anomaly. He reminded the deputation that it was not a question of what he personally might wish or think in the matter, but he had no power to act. Government pay Civil servants for certain work and attendance during office hours. He conceived that he had no right to control them in their leisure time. Some of them make a good bit of money by writing books, others write plays, others edit reviews, and so on, and some, he had no doubt, spend their evenings in a manner which, if he were consulted, he could hardly approve of. But however much he might sympathise with certain representations which had been made to him, he did not think that he had any power to stop the Civil servants from the action complained of. Certainly he had no right beyond his own office, and he doubted whether he had there.

It was remarked by a gentleman that on applying to Mr. Gladstone, the Premier had referred the deputation to the Chancellor of the Exchequer, and that it seemed foolish to send them to some one with no power.

Mr. LOWE would not quarrel with the form of expression, but proceeded to say that however just might be the complaint of the deputation, their real remedy was to go to Parliament. He had himself laboured for three years to improve the public service, and he believed with some success (applause), but he could only do so in regard to the public service itself, and not with a view to any collateral issues. He believed the stores had themselves discontinued supplying the public (No, no), but however that might be, the Government itself had no power in the matter. It was natural that a good deal of annoyance should have been occasioned, but the House of Commons was the place to go to to have the subject discussed.

## Medical Cleanings.

THE clamorous demands for wholesale honours to the medical profession, raised by the medical press, and condemned by us last month, have been ignored by her Majesty's Government, as was to be anticipated. Sir Wm. Jenner has been raised a step, and he will henceforth finish off his name with the handsome capitals K.C.B.; but he has not been admitted into the House of Lords, as the medical journals hoped would have been the case. Dr. Gull has been made a baronet. Dr. John Lowe, of King's Lynn, whose assiduous attention, we believe, was much appreciated by the royal family, may say with the soldier in the Biglow papers, as far as honours are concerned, that

"—somehow when we'd fit and licked, I ollers found the thanks  
Gut kin', o'lodged afore they come ez low down ez the ranks."

But probably he will have plenty of opportunity to distinguish himself hereafter, and he may yet hope for a handle to his name. Dr. Lowe is known in scientific circles as an accomplished botanist, so that his reputation does not rest entirely on the lucky fact that royalty came to live near him. The medical journals, or at least some of them, displayed an injured air when they found that her Majesty had not been advised to follow out the programme laid down by them. They reminded one of the representative London cabmen, sketched by Dickens, who, on receiving his fare, holds it out on his extended palm as though he would display his wrongs to heaven and earth. We have no sympathy with the greedy demands and expectations which a few doctors may have put forward; but we confess that we cannot understand why the House of Lords should be so eternally closed against the most eminent representatives of the medical art. We can understand that a popular practitioner might decline the honour, for we presume etiquette would not permit him to continue his practice if he accepted a peerage. But it does not clearly appear why medicine should be the only learned profession unrepresented in the Upper House, and we are not altogether prepared to admit the necessary inferiority of its professors to the lawyers, soldiers, divines, and wealthy mediocrities who now form its constituent elements. The time is coming on that the Legislature will have to give more attention to sanitary subjects than heretofore, and though the advice of Mr. Simon, who is the Government's sole medical authority, may be very valuable, it might be as well to check it by the opinion of one or two other "medicine lords." Many of us may live to see very radical changes effected in the constitution of the Upper House, and it will not attain its proper position as the genuine essence of aristocracy, in the true sense of that much abused word, until all its members are there by virtue of their own merits, and not by the accident of birth, nor until, among those members, are included the best representatives of all professions, each one being a man whom the nation and his own fellows shall delight to honour.

A correspondent of the *Athenæum* humorously criticises the medical Greek which it is now the fashion to introduce into the nomenclature of disease. He instances the word *dipsomania*, the addition of which, as he remarks, was about the only one point on which the doctors did not disagree during the recent controversy on the use and abuse of alcohol. *Dipsomania*, if it means anything at all, means "a mania for being thirsty," and not what the doctors understand by it, but just the reverse. The critic suggests to them that *potomania* would suit the purpose better. Besides being decent Greek, and meaning what it says, this word would have the advantage of a peculiar significance for the purely British ear. There is another barbarous word now in vogue, for which we are probably indebted to "the faculty," namely, *cleptomania*. According to all analogy (*clepsydra*, etc.), this ought to be *clepsimania*. There exists a Greek word, *κλεψιποτειν*, "to drink unfairly," i.e., "to take back-handers,"—a form of "*dipsomania*" which the doctors have not yet discussed.

We notice that another young lady, Miss Alico Vickery, passed her examination in arts at the Apothecaries' Hall on a recent occasion. This was the portal through which Mrs. Anderson, Mrs. Thorne, and Miss Downing entered the profession. *Apophos* of this fact, we notice that at his inauguration as Rector of the University of Edinburgh on

Mr. W. R. MANDLEY, chemist, late of Stourbridge, has purchased the business carried on by Mr. J. Carpenter, at No. 12, Fore-street, Teignmouth.



Monday last, Sir Wm. Stirling Maxwell made the following pertinent observations on the medical education of women:—"He was in favour of teaching women all that they desired to learn, and for opening to them the doors of the highest oral instruction, as wide as the doors of book-learning. As to medical education, he said that so long as women would minister to their sick children and husbands, he must hear some argument more convincing than he had yet heard why they were to be debarred from learning the scientific grounds of the art of which they were so often the empirical practitioners, or the docile and intelligent instruments." A popular American authoress, who writes under the pseudonym of Fanny Fern, thus addresses the lady candidates for medical position:—"The more I think on this subject, the more I am convinced, that if women spent half the time in determining their possibilities, and preparing for them, that they spend in talking about their 'rights,' it would be better for them and the cause they advocate. Having determined their possibilities, let them thunder straightway at some gate of employment for admittance till it flies open. Take your rights, my sisters; don't beg for them! Never mind what objectors say or think. Success will soon shut their mouths. Nothing like that to conquer prejudice and narrowness and ill-will."

Dr. J. N. Stevens (Plymouth) writes to the *British Medical Journal* that in two small-pox hospitals in that town he has adopted the disinfectant treatment of Dr. Sansom, viz., the administration internally of bisulphite of soda every four hours, and the application of olive-oil and carbolic acid to the pustules externally. By these means, Dr. Sansom contends "the patients are themselves disinfected, and rendered innocuous to the community at large." Dr. Stevens asserts that this plan has been attended by more favourable results than any other with which he had previously been acquainted. To make certain that no infection should be conveyed to the public after leaving the hospital, he has also caused each patient to be put for a quarter of an hour on three successive days into a bath containing a pint of chloralum.

The following are the first lines of an ode "On the Illness and Recovery of the Prince of Wales," signed Edwin Saunders, and published in the *Lancet*, and about equal to the usual standard of the poems which appear occasionally in that journal:—

"There was revelry and mirth,  
And cloudless was the sky,  
When a shadow crossed the earth,  
And a darkness passed by;"

The reference to the "cloudless sky" is particularly beautiful, and proves at least that the writer is gifted with imaginative power. A cloudless sky would cause quite a sensation in London just now if by any chance it should occur.

One sometimes wonders what becomes of the trapezists and other acrobats, who, after years of painful training emerge from obscurity, and for a few short weeks dazzle the audiences of the London music-halls, then for a month or two "star" in the provinces, and then are heard of no more. But a still more curious investigation would it be to ascertain what becomes of the human monstrosities and freaks of nature to which we have become accustomed, when their days of exhibition are over. For our own part we confess to an unreasonable scepticism with most of them. We imagine when the lights are put out and the company all gone, that the giant and giantess might be observed taking off their false heads, legs, or bodies, while the two-headed nightingales carefully lay aside the imitation ligature and walk home in the ordinary way, and the astonishing little dwarf draws out like a telescope and reaches an almost ordinary size. *Mundus vult decipi, decipiatur ergo.* At least, let us hope that such is the case, for it is almost too sad to think of the life of some poor deformed creature when the gaping crowds who come to stare have had their hour's amusement out of its misfortunes, and are tired of the sensation. We suppose, however, such exhibitions satisfy a natural craving, and must be had. It is, therefore, with peculiar pleasure that we now announce an entirely new sensation. The Tattooed Man is at present at Vienna, and after a visit to Berlin he will probably proceed to London. He has been a prisoner in some part of Chinese Tartary for certain political offences, and was sentenced to the punishment of tattooing. The whole Royal Academy of Chinese Tartary must have been engaged on the work, for surely such con-

scientious devotion to fine art has never before been witnessed. From the crown of his head to the tips of his toes he is covered with dark-blue figures of animals and plants, in the interspaces of which appear to be characters in blue and in cinnabar-red. The hands are tattooed on both surfaces, but only with inscriptions. The blue figures stop short at the insteps of the feet, but the tattooing is continued along the toes to the root of the nails in the form of red characters. Through the very hairs of the scalp and of the beard appear also designs in blue. On the forehead, one on either side, are two panthers, "regardant," as heralds would say, and separated in the middle line by red characters. There are altogether on the body no less than 388 figures. All of these are of a blue colour, and represent apes, leopards, cats, tigers, eagles, crowned sphinxes, storks, swans, men, women, elephants, crocodiles, snakes, fish, lions, snails, fruit, leaves, flowers, bows, arrows, and quivers. Some of these are fairly done after nature; others are conventionalised. The inscriptions on the surfaces of the hands b-long, according to Professor Müller, to the language of Burmah. The man is himself an Albanian. After the artists had taken so much trouble with him, this Tattooed Man very unhandsomely ran away. Now do not let us give him our sympathy too readily. What should we as a nation, say if Henry Cole, C.B., should bolt some dark night and take the South Kensington Museum with him? It seems to us that the duty of England is clear. When this man has been the lion of London long enough, he should be sent back to Chinese Tartary with Lord Granville's compliments. But then arises our unfortunate scepticism, and we cannot help wondering whether the gentleman's acquaintance with Chinese Tartary is not as limited as our own.

## THE CARBON CLOSET SYSTEM.

By EDWARD C. C. STANFORD, F.C.S.

*Abstract of a Paper read before the Mechanical Section of the British Association at the Edinburgh Meeting, 1871.*

THIS method of excretal removal was first brought forward in a paper by the author, at the Chemical Section, at the Exeter meeting in 1869. It is a modification of the earth-closet system, in which some form of carbon is substituted for earth. The main objections to the application of the earth-closet to large towns are the enormous amount of earth required, and the difficulty in obtaining the necessary supply. By the use of charcoal, the amount of deodorizer required is reduced to less than a fourth at compared with earth, and by carbonizing the manure removed a constant supply is secured.

It is urged that the sewage difficulty may be enormously lessened, if not entirely removed, by treating the excreta of towns as we treat the ashes, removing each separately, and keeping all out of the public sewers. Stress is laid on the fact that even now in London, where the water-closet system has been most fully carried out, in times of cholera epidemics the system breaks down, as the excreta of patients suffering from that disease must be kept out of the sewers, which are powerful diffusers of the poison. If this be necessary in times of panic, it is necessary always to insure safety. To effect this separation is simple and easy. The quantity per head to be removed annually cannot exceed eight cwt., of which about seven cwt. represent urine alone. The amount of carbon required to perfectly absorb and thoroughly deodorize the whole of this quantity is less than eight cwt., so that, in an ordinary household of ten persons, the total annual quantity required cannot exceed four tons, and the whole removal will, owing to the drying action of the charcoal, be about five to six tons. The same household would use twenty tons of coals, and send away about four tons of ashes, and much of this coal would have to be carried into the bed-rooms. The carbon system is so perfectly inoffensive that commodes may be placed, if desired, in every bed-room without the least fear of odour or danger to health. In this respect no water-closet can be compared with it. The carbon closets are also arranged to be quite automatic, and require no attention within the house. The charcoal is introduced through an aperture in the roof into a reservoir at the top of the house; a closet on each floor draws on this source of supply, and the whole of the product is discharged in a perfectly dry



deodorized state into a cemented vault in the basement story of the house. The chamber urine is emptied into a small earthenware urinal on each floor, and from this a lead pipe conducts it direct to the vault, where it is perfectly absorbed by the charcoal from the closets. So powerful is this absorption that, in one house, the waste water had been emptied into the urinal for eight months before it was detected, and even then there was not the least odour, and the detection was accidental. The charcoal reservoir is replenished, and the vault emptied only once a year, and both operations are quite extraneous to the house. The manure removed can scarcely be distinguished from cinders by an ordinary observer, and it is equally inoffensive. The value of the material removed is about 1s. per cwt., or 8s. per head per annum. The householder, therefore, may have the charcoal supplied and the manure removed free of charge. A company called "The Nitro-Carbon Manure Company (Limited)," has been formed in Glasgow (office, 154, West Regent-street) to collect and treat the manure and supply the charcoal. The manure is removed to the works, and carbonized in revolving retorts driven by a steam engine; the whole of the material is thus converted into charcoal, which falls from the retorts into cooling boxes, and gas liquor, tar, and gas are distilled off, and collected in suitable condensers. The charcoal increases at each re-burning by the amount obtained from the excreta itself; a portion is returned to charge the closets, and the balance is available as manure. The charcoal thus produced is an animal charcoal, resembling that made from bones, and contains all the phosphates and potash and soda salts of the excreta. The gas liquor furnishes ammonia derived from the animal portion of the food, and acetic acid derived from the vegetable portion. The tar and gas are used for heating purposes. As the ordinary dry closets are not adapted for the use of powdered charcoal, the author applied to his friends, Messrs. Pollock and Pollock, of Leeds, who have succeeded in overcoming all the difficulties, and have specially patented a new carbon closet, which is now manufactured by the Carbon Closet Company, 46, Haymount-street, Leeds. This closet is intended to use a minimum quantity of fine charcoal; it accurately measures off the charge, and delivers it exactly where it is required. The mechanism is simply arranged and placed under the woodwork at the side of the seat; it is put in action by the weight of the sitter, acting against another weight below, through a bell-crank lever attached to the seat. By the action of rising from the seat, the weight below, acting through suitable mechanism, brings forward a radial arm carrying a small cylindrical box of charcoal; the bottom is withdrawn, the charcoal gently dropped on the deposit, and the box returns to the charcoal reservoir at the back, which it constantly closes. When this closet comes into general use, the quantity of charcoal required will be much less than that estimated.

For large public works, the carbon closet is especially valuable, and is the only method of excretal removal which the clumsiest workmen cannot make offensive. The straw, cotton waste, etc., with which the pipes of all water-closets are so constantly stopped, do no harm here, and are all converted into charcoal on re-burning. The principal ship-builders on the Clyde are so impressed with these advantages that they are pulling down large and expensive erections for water-closets to substitute these.

Urinals on this system are constructed simply of vertical slabs of slate six feet high and two feet wide, set in the form of a **W** on a large stone-flag over a tank of charcoal. An occasional wash with a mop dipped in dilute hydrochloric acid will render the slabs instantly and perfectly clean. The acid is cheap, and it cannot injure either the urinal or the charcoal. The charcoal is used about the size of rifle gunpowder, and free from dust.

#### CONDENSED CHEMISTRY.

**P**ROFESSOR ODLING, M.B., F.R.S., F.C.S., has commenced a course of eight lectures on Elementary Chemistry, at the London Institution. Dr. Odling is one of the best lecturers on chemistry now living. He presents difficult subjects in the simplest manner and with perfect

fluency. We therefore judge that it will be of special interest if we reproduce a specimen of the notes from which the professor lectured on one of the occasions named. We extract this from the *Journal of the London Institution*.

#### LECTURE I.

January 15, 1872.

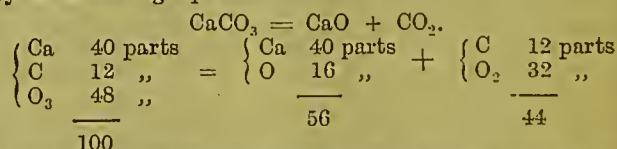
Chemistry concerned with the composition and changes of composition of all bodies whatsoever. Existence of bodies in solid, liquid, and gaseous states.

Classification of chemical substances into elements and compounds. Substances not resolvable into two or more distinct kinds of matter, in effect, simple or elementary. Definite chemical compounds distinguished from mixed substances by their homogeneity and fixity of composition.

Assignment to every element of a particular number, indicating its smallest combining proportion or atomic weight. Respective combining proportions of the different elements represented by their symbols or abbreviated names. Representation of 1 part by weight of hydrogen by the symbol H, of 23 parts by weight of sodium or natrium by the symbol Na, of 35.5 parts by weight of chlorine by the symbol Cl, etc. Combination of elements with one another only in the ratios of their proportional numbers, or of multiples of those numbers. Hence expressibility of definite compounds by allocations of elementary symbols, or by so-called chemical formulæ,—as of chloride of sodium by the formula NaCl, of protoxide of carbon by the formula CO, of dioxide of carbon by the formula CO<sub>2</sub>, etc. Determination of the atomic weights of the elements, a very complex problem.

Absorption of about one-fifth of the bulk of ordinary atmospheric air by the burning of different combustibles. Also by the rusting or calcination of different metals. Residual four-fifths of air, or nitrogen, characterised by its inertness. Recovery of absorbed one-fifth of air, or oxygen, by strongly heating calx of mercury. Reproduction of atmospheric air, by mixture of oxygen and nitrogen gases. Rapid burning of ordinary combustibles in oxygen. Burning, whether in air or oxygen, an act of oxidation, resulting in the production of oxidised bodies. Minute constituents of atmospheric air.

Atmospheric air, the type of gaseous or aerial matter. Discovery in 1756, by Dr. Black, of a kind of gas or air distinct from atmospheric air. Its designation originally as fixed air, subsequently as carbonic acid gas. This gas evolved by the action of acids on marble, limestone, or chalk. Its characteristic properties of extinguishing flame, of rendering lime water turbid, of being much heavier than atmospheric air. Carbonic acid gas an oxide of carbon, producible by burning carbon in air or oxygen. Marble, limestone, and chalk, different forms of calcium carbonate. Their conversion alike into lime, or calcium oxide, by strong ignition, with loss of carbonic acid gas. Change expressible by the following equation:—



Reproduction of insoluble chalk from soluble lime, by addition of carbonic acid gas to lime-water.

Ordinary vinegar, the type of a dilute acid. Its characteristic sourness, and property of reddening vegetable blues. The sourness and acid-reaction of vinegar due to its containing, in small proportion, a definite organic acid, acetic acid.

Production, by weathering of the mineral called iron-pyrites, of a glassy sea-green crystalline salt, still known as vitriol. By ignition of vitriol in retorts, a strong acid obtained, first known as vitriolic acid, or oil of vitriol. The same acid afterwards procured by burning sulphur in moist air, whence its designation as sulphuric acid. Dilute sulphuric acid characterised by its sourness, and acid reaction. Strong sulphuric acid characterised by its high density—about 1½ times that of water,—by its oiliness, by its corrosiveness, and by its evolution of heat on admixture with water.

By action of sulphuric acid on sea-salt, an acid vapour



produced, originally known as spirit of salt, subsequently as marine or muriatic acid, now more commonly as hydrochloric acid. Ordinary muriatic acid a solution of the real acid in water.

By action of sulphuric acid on nitre or saltpetre, another acid produced, originally known as spirit of nitre, now as nitric acid. By action of aqueous nitric acid on phosphorus, an acid produced in solution known as phosphoric acid.

Acetic acid, formic acid, and the different crystalline acids obtainable from vegetable juices, as oxalic acid, malic acid, tartaric acid, and citric acid, all composed of hydrogen, carbon, and oxygen in different proportions.

Composition of the principal mineral acids expressed by the following formulæ respectively: Sulphuric acid  $\text{H}_2\text{SO}_4$ , muriatic acid  $\text{HCl}$ , citric acid  $\text{HNO}_3$ , and phosphoric acid  $\text{H}_3\text{PO}_4$ . Carbonic acid gas  $\text{CO}_2$ , distinguished from the acids proper by not containing hydrogen.

## Foreign Correspondence.

### GERMANY.

DRESDEN, Feb. 4, 1872.

**A**NOTHER new remedy—one against small-pox has made its appearance, and has been tried in the Berliner Charité with remarkable success by Dr. Zuelzer. The name of this specific is Xylol (xylyl-hydrogen, xylen, xylenyl-hydrogen, dimethylbenzol). It is a product of the distillation of coal-tar oil, and is homologous with benzol and toluol, and possesses a specific gravity of 0.8309. It was first found by Cahours, 1850, among the distillation products of wood. By the addition of water to crude pyroxylic spirit xylol is separated, then it is agitated with sulphuric acid. After several hours' standing a mixture consisting of Xylol and other hydrocarbons is found floating over a brown liquid. This is first washed with a solution of hydrate of potash, afterwards with water, then dried over chloride of calcium and anhydrous phosphoric acid, and afterwards subjected to distillation. Xylol is then found in the liquid, running over at  $120^\circ$  to  $130^\circ$  C. It is best administered in form of oil emulsion with cinnamon syrup or in gelatine capsules. The dose for an adult is ten to fifteen drops, for children three to five drops, hourly or every three hours. Dr. Zuelzer, expressly remarks, that the good effects of xylol are only apparent when it is perfectly pure and entirely free from toluol and benzol.

The last number of the *Pharmaceut. Zeitung* published a very astounding statement respecting carbolic acid. According to this paper or rather on the authority of a Mr. Hamberg, pure carbolic acid is non-poisonous, and its fatal effects are to be ascribed to some other tar-products. Now in the face of so many accidents, which have occurred with perfectly pure acid, such a statement sounds strange. Had the learned gentleman only taken the trouble to peruse Professor Husemann's report on the treatment of poisoning cases by carbolic acid, he would have found that such a theory is declared there to be entirely false and indirect contradiction to experiments which Professor Husemann has performed on various animals.

Within the last few weeks three fatal dispensing mistakes are reported. The last and most lamentable was that of a young lady, 24 years of age, and was caused by the dispenser using morphia, instead of chinium. A similar unhappy accident occurred last summer by wrongly putting the vessel containing morph. muriatic in the place of chinium muriatic. The apprentice who dispensed the prescription, was punished with four weeks' imprisonment at a fortress. In another case, again, morphia was dispensed instead of meconium. It is curious to observe that all these fatal mistakes were committed with morphia.

The foundation fever now raging in Germany has found its way even into pharmaceutical circles. A scheme is talked about of founding a mortgage bank for the special benefit of chemists. The difficulties of borrowing money have been great for chemists for several years, and this state of things is to be remedied by such a bank. But there is one point, perhaps the most important of all, which must not be overlooked, that is, the licence of the Government, and this licence will only be granted, when the capital actually signed stands in a certain proportion to the mortgage value of the premises. At present this value is much reduced, a fact publicly

acknowledged by Danekworn, President of the North German Chemists' Association. Another obstacle is the fact that it will be utterly impossible to induce all chemists to sign for this bank, and only in such an event would there be a chance of prosperity. Even supposing they all did sign, then every one of them, according to Mr. Danekworn's calculation, would have to sign a capital of 4,000 thalers (£600) to pay off only half the mortgage debts; this is simply impossible, and so this scheme will drop.

In a report by Professor Fleck, of Dresden, on the "Chloralum Company and their Preparations," the writer asserts, that the preparations contain chloride of lead, copper, and arsenic, therefore that their use is not without danger. He estimates the disinfectant proportional power of chloralum as compared to chloride of lime, to be as 74 is to 100. I also quote the analysis of chloralum liquor published by the Professor. According to this investigation, 100 parts of chloralum contain,

82.32 per cent. of water.

0.15 " of chloride of lead.

0.10 " of chloride of copper.

13.90 " of aluminium.

0.42 " of iron.

3.11 " of calcium, and some sulphate of lime.

In the chloralum powder he declares he has found 0.72 per cent of chloride of arsenic.

### CHEMICAL SOCIETY.

**P**ROCEEDINGS of the Chemical Society, Thursday, 18th January:—Dr. Frankland, F.R.S., President, in the chair.

At this meeting Dr. Odling exhibited some very fine specimens of rare metals and their compounds, which had been lent to him by Dr. Richter and Dr. Schuchardt. Amongst these was a bar, weighing about seven ounces, of metallic indium, an element discovered a few years ago by Dr. Richter, in conjunction with Reich; also some metallic rubidium.

Mr. David Howard then read an interesting paper "On Quinine and Cinchonine and their Salts." These alkaloids are prepared artificially from quinine and cinchonine respectively by the action of heat on their salts, and are isomeric with them. Quinine occurs along with the two last-mentioned alkaloids in cinchona bark (Peruvian bark), being apparently the one which is first formed during the growth of the cinchona plant.

Thursday, Feb. 1, 1872.

Dr. Frankland, F.R.S., President, in the chair.

When the ordinary business of the Society had been transacted a "Note on the Crystalline Principle of Barbadoes Aloes" was read by Dr. W. A. Tilden, in which the author described a new derivative of aloin to which he gives the name of *chloraloin*. It crystallises from boiling water in yellow silky needles, bearing considerable resemblance to the corresponding bromine compound, bromaloin.

Dr. C. R. A. Wright then read a long and elaborate paper "On the Relations between the Atomic Hypothesis and the Condensed Symbolic Expression of Chemical Facts and Changes known as Dissected (structural) Formulæ," in the first part of which he showed the possibility of expressing chemical facts without reference to the atomic theory, and in the second examined how far these facts could be accounted for by the atomic hypothesis.

A long and very interesting discussion ensued, in which some of the speakers advocated the employment of the atomic theory to a greater or less extent as promoting the progress of chemical science, whilst others desired its abolition.

### PHARMACEUTICAL SOCIETY.

EVENING MEETING, FEBRUARY 7TH, 1872.

**T**HE meeting was fairly attended, and was marked by good discussions and papers.

Professor ATTFIELD remarked on a curious form of crystallization assumed by some chloral hydrate, which, on that account, had been presented to the museum by Messrs. Huskisson. A few ounces of the chloral were in a half-



gallon glass jar, and from the chemical had shot out twenty or thirty spear-like crystals five or six inches in length. Professor Redwood, Mr. Umney, Mr. Groves, and Dr. Tilden, commented on the curious appearance presented.

Mr. GREENISH then read a paper on "Tincture of Cinnamon," in which he first referred to the paper on this subject of Mr. Haselden, which was taken as read at the December meeting, and an abstract of which was published in the CHEMIST AND DRUGGIST last December. Mr. Greenish showed samples of tincture of cinnamon and compound tincture of cinnamon, in both of which there was considerable precipitate; and he thought this might be explained by a remark of Mr. Redwood's, which he found in the journal many years ago, that "From the investigation of a German chemist, it appears that oil of cinnamon, when exposed to the air, absorbed oxygen very rapidly, giving rise to the formation of cinnamic acid and two resins—resin alpha and resin beta."

By using a spirit in the proportion of six parts rectified to two of water, Mr. Greenish had found the decomposition was prevented. He had made some in that manner two years ago, and both kinds were still perfectly bright. In other pharmacopœias the tincture was made with spirit stronger than that ordered in the British Pharmacopœia.

The PRESIDENT remarked that he had himself suggested the same remedy, but had not had the opportunity of testing it. There were other tinctures which might be made in a different manner with advantage; among them he might mention tincture of calumba. The calumba-root absorbed a large quantity of the menstruum, and occasioned considerable loss. He had found that if sliced instead of crushed a more economical result was obtained; and he found it easy to slice it if the root were covered for one night with a portion of the distilled water which had to be used. Tincture of orange-peel too, he thought, might be improved, but he was not prepared to suggest a method.

Professor REDWOOD said that it was possible that decomposition might occur in other cases, besides those in which obvious results were occasioned. Possibly the employment of a stronger spirit in the case of the tinctures of cinnamon might not prevent the decomposition, but merely hold the separated cinnamic acid in solution. If that were so, he should consider the use of the weaker spirit preferable, inasmuch as the time of decomposition was more readily indicated than if a stronger spirit were used. He instanced as an analogous case the occurrence of crystals of benzoic acid in oil of bitter almonds freed from prussic acid, which were occasioned by the oxidation of the oil, but which were not apparent in essence of almonds, because they were then dissolved by the spirit.

Mr. GREENISH here remarked that while in the instance of the tinctures made with weaker spirit, the odour of cinnamon had quite gone, this was not the case with the tinctures made with stronger spirit.

Professor REDWOOD said that fact certainly went to show that in the latter case decomposition was at least delayed by the employment of a stronger spirit. But it was very difficult to judge the proportion of an essential oil by taste or smell. He instanced a fact that had come to his knowledge of some balsam of tolu being in the market, which, though of excellent odour, was proved, on investigation, to be a balsam from which syrup had once been made.

Mr. MACKAY described his experience in the manufacture of essential oil of bitter almonds free from prussic acid, which he had prepared largely. He had always found the decomposition of a considerable quantity of crystals of benzoic acid, especially if the oil were exposed to sunlight; but he thought it remarkable that, in spite of that, the oil should retain its flavour to so great an extent.

Mr. MARTINDALE thought there were many cases in which rectified spirit might be substituted for proof. The latter often took up inert substances. He intimated, too, that there was reason to believe that it would be an advantage if many tinctures were made in a more concentrated form.

Mr. GROVES thought it probable that rectified spirit might prevent the decomposition of the essential oils by reason of its abstraction of the water. He thought it was proved by Mr. Greenish's experiments that oxidation was deterred.

Mr. UMNEX had found that two or three pieces of chlorido of calcium, placed in a quantity of essential oil of almonds freed from prussic acid, took up the water, and the

oxidation afterwards did not take place as rapidly as under ordinary circumstances.

Mr. WILLIAMS mentioned that Dr. Hofmann had met with some essential oil of almonds, which he had found to contain 33 per cent. of rectified spirit. The makers said they had put it in for the purpose of keeping it.

Mr. GROVES mentioned a case which he had met with in dispensing, that on adding liquor potassæ to syrup of tolu, prepared according to the Pharmacopœia, a jelly was formed after a time, so firm that the bottle could be inverted without the contents running out.

After this discussion, Mr. HANBURY read a "Note on the Longouze of Mauritius." This plant was at one time thought to be identical with the great Cardamom of ancient writers, but that is not the case, nor does the Longouze enter into commerce. Mr. Hanbury had raised some of the plants from seed in his own garden, and had proved their exact identity with a plant of the same species, *Amomum Danielli* of Hooker, which had been found on the western coast of Africa.

Professor ATFIELD then read two papers contributed by Dr. J. E. Vrij, of the Hague; the first on "The Separation and Quantitative Determination of the different Cinchona Alkaloids;" and the second on "The Samadera Indica," a fruit from Java, from which an intensely bitter alkaloid, samaderine, had been obtained.



#### MILDREN'S DISINFECTING SAWDUST.

THE Disinfecting Sawdust, prepared by Mr. Mildren, of Hayle, is a most useful application of carbolic acid. It is quite evident that a powder may often be employed where a liquid is not admissible, and from the sample before us we are satisfied that sawdust is a specially useful medium for the conveyance of a disinfectant. The safety from poisoning ensured by the sawdust, too, is a strong point in its favour. This article is supplied in tins, which are readily converted into dredgers. Mr. Mildren also supplies in elegant silk bags, disinfecting sachets, which, while they provide the same wholesome odour, supply it in a softened manner, and combined with other perfumes, so as to be very refreshing as well as disinfecting.

#### XYLOL.

We have received from Messrs. Domeier and Co., a sample of Xylol, the new and much-vaunted German remedy for small-pox. Some further particulars in reference to it will be found in the letter of our German correspondent, but we have not yet heard enough to judge whether it is likely to prove a second *Chloral* or a duplicate *Condurango*.

#### HOOPER'S LADIES' CACHOUS.

Mr. HOOPER, of King William-street, whose reputation for the silvered cachous is of old and universal, now introduces a variety of the same idea, especially for the use of ladies. The same aromatic ingredients as those which flavour the silvered cachous are here presented in the form of a very small lozenge, and these are put up in neat boxes. We have not much doubt but that the ladies will appreciate the attention which has thus been paid to them, though it is to be hoped that some of our superfine reviews and journals will not find in the introduction of these cachous a proof that the consumption of tobacco is largely on the increase in the boudoirs of Belgravia.



## BELGIAN VINEGAR.

WE have received a sample of a very superior vinegar, which we are pleased to introduce to our readers. It is manufactured at Anvers, and is supplied in England to wholesale and export orders by the Concentrated Pure Malt Vinegar Company, of Bermondsey. It is perfectly pure, and is supplied in a concentrated form. It is prepared solely from malt, but its odour and flavour are exactly similar to the more expensive French wine vinegar. Chemists and druggists may with advantage take up the sale of this fine vinegar.

## THE CONTROVERSY ON PSYCHIC FORCE.

IT is not our intention to pass in consecutive review the many utterances of men of science, more or less distinguished, who during the past few months have placed on record their observations or opinions in respect to the phenomena which are usually associated with the existence and presence of disembodied spirits. We shall assume that our readers are familiar with the history of the subject, at least in its most recent developments, and especially with the investigations made in the course of last year by Mr. William Crookes, F.R.S., the eminent chemist, in conjunction with several other gentlemen whose testimony is entitled to the most serious respect.

We have no means of gauging either the numbers or the individual intelligence of those who in this country constitute the body of faithful Spiritualists; but what means we have of guessing, does not lead us to suppose that the total number is very considerable. On leisure evenings, we have not infrequently attended their public *séances*, and have sometimes sought a little amusement in their periodicals. We have invariably found the *séances* very meagrely attended; and if the advertising columns of the journals may be taken as an index of their popularity, we should say their readers are extremely select. Now this is somewhat singular. A professed conjuror, if he be fairly clever, can generally draw a good audience, and any decently fluent preacher can always count on a congregation at least of hundreds. And yet when the two are combined, when, not simply conjuring tricks but miracles are performed, and when the denizens of the spheres beyond the grave are promised to be added to the company, we have generally found the visitors number somewhat less than twenty. We have now in our mind a *séance* at which, a few minutes after the hour announced, a patriarchal looking medium entered, and, seating himself at the head of the table, proceeded into convulsions forthwith, in the course of which we were informed his own spirit was leaving him, and that of some African saint or savage took the vacant place. We distinctly saw the convulsions, and with our own lips we conversed with this resuscitated African concerning the mysteries of the unseen world. And yet to such an astounding event there were, we believe, less than a dozen witnesses, our own party making up five even of that number. If such an occurrence as that were supported by the slightest reasonable evidence, it ought to have drawn half the world to witness it. But Spiritualists regard it as a very little thing indeed. At other *séances*, occurrences far more wonderful have taken place, and still from one dozen to two dozen has been the limit of the witnesses. But however small the attendance, it must not be supposed that real Spiritualists muster in even such multitudes. The company is always composed of a few only of the genuine believers, several in process of conversion, and a number of open sceptics. The third section find the chief amusement of the affair in the evidently earnest and respectful manner in which the first-named class accept whatever manifestations occur, and the interpretation of them which is vouchsafed by the presiding medium.

Our own experience with the mediums has been simply convincing proof that what we have seen has been the most transparent humbug; and this, too, has been the experience of everyone whom we know personally; but, then, everyone knows many persons, who know some other persons to whom the most convincing proof of the genuineness of these experiments has been given; and further, we have constantly been informed by the managers of these *séances*

that we have been present on unfortunate evenings, most marvellous events having frequently happened on the evenings preceding our visit. For these and sundry other reasons we are constrained to confess that we are not in a position to pass a judgment on the manifestations in question; and we freely admit too, that even though we could absolutely prove far more as to the falsity of the pretensions put forth by many mediums than we have suggested, such proof would in no way impugn the good faith of others who might still be possessed of the genuine article. The fact that the Davenport Brothers were pretty conclusively exposed, ought not to be accepted as an argument that Mr. Home is in the same boat, but it does give fair reason for a moderate amount of caution in accepting the extraordinary claims which he and his friends put forth.

Well, then, taking it for granted that some very remarkable manifestations have been exhibited by Mr. Home and also by others, which have challenged and have commanded the submission of men of high intellect to his pretensions, and taking into consideration also the fact that these occurrences have never yet been explained, nor that any trick in their production has been yet detected, we are not quite disposed to condemn Mr. Crookes for having commenced a careful investigation of the said phenomena. That he, with two other competent coadjutors, came to the conclusion that such phenomena as Mr. Home presented were not explainable without the assumption of a new force is, to say the least of it, a very weighty piece of evidence. But, though weighty, such evidence is by no means conclusive, and we may confidently say that no unbeliever would be even justified in submitting to conversion with no other authority. Considering all that Mr. Crookes and his friends say they saw, and all that they did not see, we can hardly be surprised that they should be converts; but the outside world, with every respect for Mr. Crookes, Dr. Huggins, and Sergeant Cox, cannot be expected to accept as proved the existence of miraculous power on the part of Mr. Home, until he is willing to subject himself to every fair test, not in a private parlour, but with the fullest possible publicity. It must be remembered that the phenomena recorded, and the force suggested to account for their occurrence, are in violent contradiction to every known condition of natural existence and natural law; and further, that it is possible they may be accounted for by an assumption of skilful sleight of hand. It is not in our province to indicate the circumstances which point to the conclusion that the latter is by far the more probable hypothesis; they are, however, obvious. There is nothing therefore at all unreasonable in the incredulous attitude of any scientific or intelligent man, even after the publication of Mr. Crookes's report, which appeared first in the *Quarterly Journal of Science*, and attracted considerable attention.

We now come to the controversy proper. The most able exponent of the case against Psychic Force was a writer in the *Quarterly Review* of last October. The article was entitled "Spiritualism and its recent Converts;" and though it dealt with other champions besides those we have named, it was evidently suggested by, and especially directed against the experiments and opinions which had appeared in the *Quarterly Journal of Science*. To this attack Mr. Crookes has lately published a rejoinder in pamphlet form, and both now lie before us. It is, we believe, beyond question that the writer in the *Quarterly Review* was Dr. W. B. Carpenter, the eminent physiologist, and the same gentleman who last year delivered two lectures on Microscopic Science before the Pharmaceutical Society. The principals in this tournament are both able literary fencers, and the interest is still further augmented by the introduction of personal arguments.

At the outset, Mr. Crookes objects to be classed as a convert to Spiritualism. He quotes passages from his own article, which either ridicule or directly oppose the assumption of such a theory, and he says that he chose the name *Psychic* because he was "most desirous to avoid the foregone conclusions implied in the title *Spiritualism*." In this matter Mr. Crookes seems a little unreasonable, and we think the Spiritualists proper have fair reason to complain. He examines the phenomena which they are able to exhibit, and the miracles which they assure him they perform by spiritual agency, and then when they have driven him to admit their genuineness, he escapes un-



worthily by calling the agency not *Spiritualism*, but *Psychic Force*, which in English means *soul force*. What on earth is that but Spiritualism under another name? But, says Mr. Crookes, call the agency what you will—*ψ* force if you choose—I only say that I have put my finger on a hitherto unrecognised form of force. And that force can play “The Last Rose of Summer” on an accordion visibly floating in the air, touched and drawn out, but by no human power. We say there is no logical escape for anyone. That phenomenon, if produced at all, was produced either by necromancy or by intelligent spirits. The reviewer was quite right in assuming without any waste of words that Mr. Crookes was a convert to Spiritualism.

The earlier part of Dr. Carpenter's article is a lucid and deeply interesting exposition of some very curious psychological inquiries. That there is a reflex action of the brain, unconscious cerebration, as Dr. Carpenter himself calls it, or latent thought, as Sir William Hamilton had better expressed it, is beyond all question. The mind acts unconsciously just as many motions of the body are so produced. At great length, and with much ingenuity, the reviewer endeavours to explain all the phenomena of clairvoyance, mesmerism, table-rapping, and trances—operations by this theory. In justice to the Spiritualists, however, it must be remembered that the reviewer selects his own examples, and when he comes to any even among them which will not be reduced to his theory, he applies ridicule.

Mr. Crookes narrates with much humour the substance of a conversation with the *Quarterly* reviewer in question, at Edinburgh, last August, just after the former had published his experiments.

“Ah! Mr. Crookes,” said he, “I am glad I have an opportunity of speaking to you about this Spiritualism you have been writing about. You are only wasting your time. I devoted a great deal of time many years ago to Mesmerism, Clairvoyance, Electro-biology, Table-turning, Spirit-rapping, and all the rest of it, and I found there was nothing in it. I explained it all in an article I wrote in the *Quarterly Review*. I think it a pity you have written anything on this subject before you made yourself intimately acquainted with my writings and my views on the subject. I have exhausted it.”

“But, Sir,” interposed I, “you will allow me to say you are mistaken, if—”

“No, no!” interrupted he, “I am not mistaken. I know what you would say. But it is quite evident from what you have just remarked, that you allowed yourself to be taken in by these people when you knew nothing whatever of the perseverance with which I and other competent men, eminently qualified to deal with the most difficult problems, had investigated these phenomena. You ought to have known that I explain everything you have seen by ‘unconscious cerebration’ and ‘unconscious muscular action,’ and if you had only a clear idea in your mind of the exact meaning of these two phrases, you would see that they are sufficient to account for everything.”

“But, Sir—”

“Yes, yes; my explanations would clear away all the difficulties you have met with.”

So the dialogue proceeds, and at last the critic concludes thus:—

“Well, Mr. Crookes, I am very pleased I have had this opportunity of hearing these explanations from yourself. One learns so much in a conversation like this, and what you say has confirmed me on several points I was doubtful about before. Now, after I have had the benefit of hearing all about it from your own lips, I am more satisfied than ever that I have been always right, and that there is nothing in it but unconscious cerebration and muscular action.”

But in writing his critique in the *Quarterly Review*, the reviewer is quite able to see that no twisting of the theory of unconscious cerebration will account for the accordion playing “The Last Rose of Summer” without human agency. The experiments recorded by Mr. Crookes, Dr. Huggins, and Serjeant Cox, the manifestations testified to by Lord Lindsay and Lord Adare, who say they saw Home float from one window to another, seventy feet from the ground, and the amusing narrative of Mrs. Guppy, who, it is said, was brought from Highbury to Lamb's Conduit-street by spiritual agency, in almost an instant of time; these, and many other manifestations like them, depend for their weight as pieces of evidence, first, on the veracity, and secondly, on the ability of the witnesses who report the circumstances. We cannot consider, therefore, that Mr. Crookes has any reason to complain, because he and his friends are personally criticised. We do not by any means think that the reviewer is just in his criticisms, and on Mr. Crookes especially he has no mercy whatever. But, admitting as every one does, the perfect veracity of the witnesses in this instance, it is a perfectly fair subject of

inquiry as to their competence to investigate this so-called new force. The reviewer describes Dr. Huggins as a scientific amateur who labours under the grave disadvantage of a want of that broad basis of general scientific culture, which alone could keep him from the narrowing and perverting influence of a limited specialism. Serjeant Cox, “whatever may be his professional ability, is known to those conversant with the history of Mesmerism, as one of the most gullible of the gullible, as to whatever appeals to his organ of Wonder.” Mr. Crookes, the reviewer intimates, has won his scientific reputation almost by a fluke, though he admits the care and accuracy with which Mr. Crookes described the properties and chemical relations of the metal thallium, which he had himself discovered.

“For this discovery he was rewarded by the Fellowship of the Royal Society; but we speak advisedly when we say that this distinction was conferred on him with considerable hesitation, the ability he displayed in the investigation being purely technical. We are assured, on the highest authority, that he is regarded among chemists as a specialist of specialists, being totally destitute of any knowledge of chemical philosophy, and utterly untrustworthy as to any inquiry which requires more than technical knowledge for its successful conduct. He entered upon the inquiry, of which he now makes public the results, with an avowed foregone conclusion of his own; and this obviously deprives his ‘conviction of their objective reality’ of even that small measure of value to which his scientific character might have given it a claim, if his testimony had been impartial. That he had not prepared himself for the investigation, by making himself acquainted with what had been previously ascertained in regard to the real nature of kindred phenomena, we have already pointed out.”

These charges are very sweeping, and in every case very inaccurate. Mr. Crookes was elected a Fellow of the Royal Society, in 1863 on the nomination of Professor Williamson, the first year of application. Had there been “considerable hesitation” his election would have been at least postponed, especially considering that there were about fifty candidates for fifteen places. There is no foundation whatever for the group of charges contained in the second sentence we have quoted, and even if there had been, one can scarcely recognise the logic of proving (to quote from Mr. Crookes's pamphlet) his unfitness to ascertain the weight of a piece of wood because he was ignorant of chemical philosophy. As a matter of fact, the career of Mr. Crookes has been a remarkably successful one, and he has won his position by sheer hard work, an assertion which those who know him will not deny. If he had a foregone conclusion when he entered on this investigation, it was undoubtedly against, and not in favour, of any theory like *spiritualism*. The reviewer seems to imagine that his own foregone conclusion in no way affects his judicial impartiality. Lastly Mr. Crookes asserts in reply to the reviewer's final accusation of his ignorance as to the investigations of other scientific men that he has read an immense number of these, including even Dr. Carpenter's article on Electro-Biology and Mesmerism in the *Quarterly Review* for October, 1853.

So stands the controversy at present—Mr. Crookes and his associates have fairly surrendered either to Mr. Home's psychic force or to his sleight of hand, but they cannot expect sensible men to believe in the frequent occurrence of the most absurd and meaningless miracles simply because they have themselves been convinced. It is said that Mr. Home has declined to “exhibit” before Professor Tyndall. What more convincing proof can be given of the falsity of his pretensions? We give him a high place as a *prestidigitateur*, or we are willing to believe in unconscious cerebration as far as that explains his vagaries; but we do hesitate to insult the spirit world by accepting the theory of *psychic force* which would teach us that he can himself separate his soul from his body, or of *spiritualism* which asserts that he can employ the soul of his grandmother to do all sorts of silly tricks.

#### THE INTERNATIONAL EXHIBITION, 1872.

HER Majesty's Commissioners have appointed certain days during the month of March for the reception of articles intended for exhibition in the forthcoming annual International Exhibition of 1872, the second of the series. In reminding our readers of this fact, we may also allude once more to the general plan on which those annual exhibitions are arranged. In each year there are three divisions of objects, namely (A) Fine Arts, (B) Manufactures, and (C) recent Scientific Inventions and new discoveries of all kind. Divisions A and C are permanent, but in B a different



series is taken each year—last year, for instance, woollen fabrics and pottery were the chief specialities. This year the classes in the second division are thus arranged:—

CLASS 8. Cotton and Cotton Fabrics.

- „ 9. Jewellery, *i.e.*, Articles worn as Personal Ornaments made of Precious Metals, Precious Stones, or their imitations, but not Goldsmiths' and Silversmiths' Work, which will be exhibited in 1876, or Watches, which will be Exhibited in 1875.
- „ 10. Musical Instruments of all kinds.
- „ 11. Acoustic Apparatus and Experiments.
- „ 12. Paper, Stationery and Printing:—
  - a. Paper, Card, and Millboard.
  - b. Stationery, Account Books, etc.
  - c. Letterpress, Plate, and all other modes of Printing.

Raw Materials, Machinery and Processes used in the production of all the several Classes of manufactures mentioned above.

The first Division (Fine Arts) includes Paintings of all kinds, in Oil and Water Colours, and on Glass, Porcelain, Mosaics, etc. Sculpture, Modelling, etc. Engraving, Lithography, Photography. Architectural Designs. Tapestries, Carpets, Embroideries, Shawls, Lace, etc., shown not as Manufactures, but for the Fine Art of their design in form or colour. Designs for all kinds of Decorative Manufactures. Reproductions, *i.e.*, exact Copies of Ancient or Medieval Pictures painted before A.D. 1550.

The third Division (Recent Scientific Inventions and Discoveries) embraces all kinds of inventions and discoveries which may be deemed worthy of admission, but these must have been produced since 1862. As a general rule, explosive and dangerous substances, including such as are liable to spontaneous combustion or would be deleterious to other objects placed near them, will not be admitted.

In the case of objects requiring the use of fire, gas, steam, or water, or of any other motive power, the application must distinctly specify what provision is necessary to be made for working them, and what securities are required against danger or accident; but her Majesty's Commissioners can only make the necessary provision for those applicants whose requirements in the respects have been notified to them before the 1st of January, 1872.

All objects for this Division must be delivered for approval at the Exhibition Buildings on the 2nd of March, and must be labelled and presented in accordance with regulations which will be supplied on application to the Secretary to her Majesty's Commissioners, Major-General Henry Y. D. Scott, Upper Kensington Gore, London, W.

It may be advisable that we should thus early remind some of our readers that Steel, Cutlery and Edge Tools, Surgical Instruments and Appliances will form part of the Exhibition of 1873.

### THE CHICAGO FIRE.

OUR contemporary, the *Pharmacist*, of Chicago, has now reappeared, and from its pages we gather some interesting details of the recent terrible calamity which overtook that city. We hope a few paragraphs extracted from the journal we have named will be acceptable to our readers.

As contrasted with the other great fires of history, that of Chicago, in the gross value of property consumed and the area devastated, is beyond question the most overwhelming that ever overtook a city. There are 2,500 acres burnt over. Twenty thousand buildings have been destroyed, and 100,000 people have been turned into the streets and thrown out of employment. A list of leading business houses destroyed in the conflagration filled four columns of the *Tribune*, small print. This list did not embrace 5,000 houses doing a partially wholesale business, and the long array of retail establishments. The ruins of Herculaneum and Pompeii could but inadequately represent this sudden overwhelming calamity.

The fire commenced on the corner of Dekoven and Jefferson-streets, on the West side. The houses in that part of the city were wooden, and from the prolonged dry weather were converted into kindling wood. The strong wind from the south-west urged on the flames with the force and precision of a tornado in its path through a

forest. The fire followed Jefferson-street, taking all the buildings on the east side of that street, while the houses on the opposite side were scarcely scorched. The flames crossed the South Branch near the scene of the fire of the previous night, October 7th. All the large lumber yards and wooden factories on Canal-street gave body to the fire in the neighbourhood of the river. Van Buren-street Bridge was consumed, its ironwork melting down instantly before the intense heat. The long line of the Fort Wayne and Chicago R. R. freight depot was here ignited, and also a magnificent elevator. The gas-works on the east side of the South Branch immediately took fire with explosive violence, and straightway the fire became a veritable deluge, for oceans of blazing tar flew out far and near. It was but an instant, and the great Pacific Hotel burst into flames, from which the fire, urged and condensed by the fierce wind, as is a flame before a blowpipe, reached out far into the devoted town.

Before the fierceness of this flame, iron melted down like wax; limestone became quicklime; the Nicholson pavements were fairly gnawed into by the hungry element.

From this point it would be impossible for one witness, or a score of witnesses, to record the succession in which the imperial structures went down to their death. The streets were packed with dense crowds of struggling humanity, who could scarcely escape before the swirling maelstrom of fire filled the street. All the great stone and iron-fronted structures went down more swiftly than the wooden shells where the fire originated. The fiery torrent seemed to swallow up and bear along everything in its path. Streets were no barriers. All the fire-proof buildings shared the common fate. Block after block went down in rows, and so rapidly that little was saved.

The fire commenced at nine o'clock p.m.; at half-past one it crossed the South Branch and entered upon its terrible work. So rapid and resistless its march, that at three o'clock a.m., it was already ravaging the North side and had disabled the water works; and then no hope was left in any heart of saving the devoted town. The fire absolutely burned itself out, keeping on until there was no more material to supply its ravages.

By Monday evening the fire had essentially spent its fury. Thus in twenty-four short hours the whole of this terrible disaster was consummated.

The fearful lesson taught by this fire is, that nothing is secure in modern cities against such desolation. We are now satisfied that there is no city in Christendom which is not at the mercy of a spark.

The great houses of our cities should be more isolated in every way. The Chicago fire demonstrates that of all building material, brick is the best, beyond peradventure, for resisting fire. Iron melts, breaks and lets down all superincumbent structures.

A word concerning the great wave of sympathy which has set towards Chicago, from every part of the world. Such a going forth of help, instant and mighty, was never before known in human history. While the hungry flames were still devouring our beautiful city, help came from every city from Maine to the Gulf. St. Louis and Cincinnati, our rival sisters, opened their hands widely for our relief. Swifter than bird ever sped to its nest came the relief which was never more greatly needed. Europe, even, was awake to our calamity; and from London, Liverpool, and Frankfort-on-the-Maine, came immediate and tangible help.

We are among those who fully believe in the manifest destiny of Chicago. She will rise again stronger, fairer, better than ever before. Her railroads remain, and Lake Michigan, her tributary divinity. If a third of a century has witnessed the whole of her marvellous rise against almost insuperable difficulties, a half-dozen years will completely reinstate her. The spirit of the people is unflagging in activity and enterprise—these are unconsumed, and will surely repeat the triumphs of the past.

To us personally, one of the saddest things connected with the late fire, and peculiarly unfortunate as bearing on the interests of the science of Pharmacy in the West, is the total loss of property belonging to the Chicago College of Pharmacy. This loss includes, of course, all its valuable furniture and appliances, apparatus and library—the most complete in chemistry and pharmacy to be found in the West—and a large and valuable cabinet, the labour of many years in selecting and accumulating. We are happy,



however, to announce that, notwithstanding this severe loss, which involves the present suspension of the course of lectures, the energy and devotion of the members of the College are equal to the emergency, and that they contemplate the reinauguration of the school by next season.

No department of our mercantile interests suffered more generally, or in proportion to the capital invested, more severely, in the great fire than did the drug trade. Of the 160 retailers of drugs in the city, upwards of fifty, or more than one-third of the whole number, lost their all in the wide-spread devastation. It would be difficult or impossible to give an accurate estimate of their losses, but it may be confidently asserted that the sum total would not fall short of 400,000 dols.; these figures allude to losses of the retail druggists only. Among the sufferers were all the larger establishments, whose location in the heart of the city, requiring large and varied stocks and expensive fixtures, secured to them a most extensive and valuable trade. Not only have our druggists lost their material possessions, but in many instances, the advantages of a good reputation, secured by long years of toil in certain localities, were also wrested from them by the sudden depopulation of whole districts, and the scattering of population. The successful druggist, however, has not secured that distinction without labour and hardship, and hard as it is to be thus cast adrift, he will be able to reach a safe anchorage, where many another mortal would sink to rise no more. A majority of the apothecaries will be able so to arrange affairs as to recommence business.

Such was the rapidity of the destruction that scarcely anything was saved, but few being fortunate enough to rescue even their books and prescription files. Those who were located on the north side, lost their dwellings and personal effects also. When we add that insurance will give an average return of perhaps 15 per cent., our readers can imagine the extent of the losses sustained.

With the energy characteristic of Chicago, several of the druggists whose stores had been destroyed were located in new quarters before the expiration of the week, while others had equally early made arrangements for resuming business as soon as buildings could be procured.

The only business block in the region desolated by the fire which stands to-day unscathed is that known as Lind's Block, on the west side of Market-street, between Randolph and Lake; the buildings on the opposite side of the street suffered the common fate, but Lind's Block, favoured by the unusual width of the street, and the direction of the wind, escaped. Occupying Nos. 20, 22, and 24 of this block, our fortunate friends, Messrs. Fuller and Fuller, wholesale druggists, were left intact, excepting a severe scorching, and the loss of the numerous signs which formerly decorated their establishment.

The extensive character of the wholesale drug trade of Chicago is universally known; it has fully kept pace with the general growth of business in the city, the gross sales of the leading wholesale druggists amounting in the aggregate to 5,000,000 dols. annually. With remarkable energy, all the drug houses, save one, secured new locations and were prepared as usual for business within a few weeks following their total destruction.

#### THE CHICAGO COLLEGE FUND.

THE following is a list of the subscriptions promised up to February 12th, 1872.

The members of the Chicago College of Pharmacy, notwithstanding their own great losses, will themselves provide a new building. Their appeal is solely for donations of articles for the library, lecture-room, and museum. British chemists and druggists, unable to give books, etc., are invited to send subscriptions of money, the whole of which will be expended by the Committee in the purchase of appropriate contributions.

Parcels of books, specimens of chemicals, or articles of the Materia Medica, apparatus and subscriptions may be sent to Professor ATTFIELD, 17, Bloomsbury Square, London, W.C. Cheques, crossed "London and Westminster Bank," and Post-Office Orders, drawn for "High Holborn," may be made payable to JOHN ATTFIELD. All donations will be acknowledged in the PHARMACEUTICAL JOURNAL and CHEMIST AND DRUGGIST.

#### Amount previously acknowledged, £272 11s. 6d.

	£	s.	d.
William Edwards, 38, Old Change, London .. ..	10	10	0
J. T. Davonport, 33, Great Russell-street, London ..	5	5	0
Wright, Sellars, and Layman, Southwark, London ..	5	5	0
F. C. Calvert and Co., Bradford, Manchester .. ..	5	5	0
William Mather, London and Manchester .. ..	5	5	0
George Edwards, Dartford .. ..	0	10	6
James Ewon, 5, Hatfield-street, London, S.E. ..	1	1	0
J. and A. Churchill, 11, New Burlington-street, London..	3	3	0
Robinson and Sons, Wheat Bridge Mills, Chesterfield ..	3	3	0
James Muskett, Harleston, Norfolk .. ..	0	5	0
William George Tryon, Landport .. ..	0	10	0
W. C. Tryon, Landport Hampshire .. ..	0	3	6
James J. McDougall, 158, Leadenhall-street, London ..	0	10	6
T. Binge, 23, Stockbridge-terrace, Fimlico, S.W. ..	0	5	0
Archibald Macintosh, Rothesay, N.B. ....	0	5	0
J. S. Robinson, Alfreton, Derbyshire .. ..	0	5	0
John Booth, Heckmondwike .. ..	1	1	0
A. Friend, York .. ..	0	2	6
John C. Pooley, 8, George-street, Bath .. ..	0	5	0
Joseph Bowerbank, Coekemouth .. ..	1	1	0
William Farnworth, Blackburn, Lancashire .. ..	1	1	0
John Watts, D.Se., 57, Baker-street, W. ....	0	5	0
Mrs. Cox, Stoney Stratford .. ..	0	10	0
J. D. Manning, jun., Yeovil .. ..	0	5	0
J. W. Swan, Mosley-street, Newcastle-on-Tyne ..	1	1	0
George Lister, Cottingham, Yorkshire .. ..	0	10	6
Thomas Kent, 226, Blackfriars-road, S.E. ....	0	10	6
A. H. Finch, Walter's-road, Swansea .. ..	0	2	6
James Howorth, Doncaster, Yorkshire .. ..	0	10	0
W. H. Smith, Sussex County Hospital, Brighton ..	0	5	0
Augustus Bird, Wood-lane, Shopper's Bush, W. ....	1	1	0
John Hunter, Gosport, Hampshire .. ..	0	5	0
John Carr, 171, High Holborn, W.C. ....	1	1	0
H. A. Thompson, 22, Worship-street, E.C. ....	1	1	0
J. B. Barnes, 1, Trevor-terrace, Princes-gate, W. ....	1	1	0
Henry Prince, 5, Fore-street, Taunton .. ..	0	10	6
J. J. Evans, 51, Fore-street, Taunton .. ..	0	2	6
"A former Student," Taunton .. ..	0	2	6
Goodhall, Backhouse, and Co., Leeds, Yorkshire ..	1	1	0
John Page, 47, Blackfriars-road, S.E. ....	0	10	6
Warwick Brothers, Old Swan-lane, E.C. ....	1	1	0
The British Seaweed Co., 154, West Regent-st., Glasgow ..	2	2	0
Ansar, Harford, and Co., 77, Strand, London .. ..	2	2	0
W. J. Bush and Co., 21, Artillery-lane, London ..	0	10	0
Freshfield Reynolds, 14, Commercial-street, Leeds ..	0	5	0
Edwin Yewdall, 40, Nade-lane, Leeds .. ..	0	5	0
Samuel Taylor, 1, Great George-street, Leeds ..	0	5	0
A. Friend, Leeds, Buckmaster's "Physics" and ..	0	2	6
Edward Brown, 66, Woodhouse-lane, Leeds ..	0	10	6
Richard Bryor, 66, Woodhouse-lane, Leeds ..	0	2	6
J. H. Thomas, 66, Woodhouse-lane, Leeds ..	0	2	6
John Abraham, 87, Bold-street, Liverpool .. ..	1	1	0
John Saville, Howden, Yorkshire .. ..	0	5	0
John Hallaway, 52, Castle-street, Carlisle .. ..	0	5	0
Charles Payne, 3, High-street, Wrexham .. ..	0	10	6
"C," 18, Wheeley's-lane, Birmingham .. ..	2	2	0
Butler and Tannor, Frome, Somersetshire .. ..	1	1	0
Samuel Foulgor and Son, 133, St. George-street, London..	1	1	0

#### CHEMISTS AND DRUGGISTS OF HULL.

By Mr. Atkinson Pickering.

	£	s.	d.		£	s.	d.
Atkinson Pickering .. ..	1	1	0	Charles Stringer .. ..	0	2	6
Myers and Co. ....	0	10	0	W. S. Shepherdson ..	0	2	6
C. P. Gibson .. ..	0	10	0	J. C. Hutchinson ..	0	2	6
C. B. Bell .. ..	0	10	0	J. B. K. ....	0	2	6
Lofthou and Saltmer ..	0	10	0	G. J. Briggs .. ..	0	2	6
C. L. Metcalfe .. ..	0	5	0	L. M. Biliary .. ..	0	2	0
G. Dyson .. ..	0	5	0	S. E. Blackbourn ..	0	2	0
James Baynes .. ..	0	5	0	J. B. Dohson .. ..	0	2	0
C. T. Hammond .. ..	0	5	0	J. R. Fisher .. ..	0	2	0
F. Toogood .. ..	0	5	0	W. Jubb .. ..	0	2	0
G. Wokes .. ..	0	5	0	J. Charter .. ..	0	2	0
Alfred Green .. ..	0	2	6	H. T. B. Young ..	0	2	0
W. A. Lawton .. ..	0	2	6	R. Bellamy .. ..	0	2	0
John v. 22 .. ..	0	2	6	G. Noble .. ..	0	2	0
J. G. Milnor .. ..	0	2	6	J. Oldham .. ..	0	2	0
J. B. Kirtan .. ..	0	2	6	R. Banks .. ..	0	2	0
J. Escreet .. ..	0	2	6	"A Friend" .. ..	0	1	0
W. Grindall .. ..	0	2	6	C. J. Chapman ..	0	1	0
Ward Shaw .. ..	0	2	6	"A Friend" .. ..	0	1	0
S. Gunnoe .. ..	0	2	6	"A Friend" .. ..	0	1	0
"A Friend" .. ..	0	2	6	R. Wilson .. ..	0	1	0
H. N. Hall .. ..	0	2	6	W. T. Owbridge ..	0	1	0
M. L. Kellington ..	0	2	6	J. Bradley .. ..	0	1	0
E. Jubb .. ..	0	2	6	D. Vickerman ..	0	1	0
J. W. Hickson .. ..	0	2	6	Walter Staning ..	0	1	0
W. Staning .. ..	0	2	6				

#### CHEMISTS AND DRUGGISTS OF BRISTOL AND CLIFTON.

By Mr. Charles Townsend.

	£	s.	d.
Ferris and Company, 4 and 5, Union-street .. ..	2	2	0
Theophilus Aekormian, 32, Redcliffe-hill .. ..	0	5	0
Richard William Giles, Clifton .. ..	1	1	0
Henry Matthews, Cotham-brow .. ..	0	10	0
John Pitman, 50, Redcliffe-hill .. ..	0	10	6
Walter William Stoddart, 9, North-street .. ..	1	1	0
John Stroud, 23, Wine-street .. ..	0	10	6
George Frederick Schacht .. ..	0	10	0
Joseph Taplin, 13, Corn-street .. ..	0	10	0
Charles Townsend, 4, and 5, Union-street .. ..	1	1	0



## CHEMISTS AND DRUGGISTS OF SUNDERLAND. By Mr. William Thompson.

	£	s.	d.		£	s.	d.
William Thompson ..	1	1	0	H. Thompson ..	0	5	0
D. B. Sharpe ..	0	5	0	G. C. Slagwick ..	0	2	6
J. J. Nicholson ..	0	5	0	F. Clark ..	0	2	6
John Walton ..	0	5	0	C. S. Lord ..	0	2	6
John Robert Thompson ..	0	5	0	T. Chapman ..	0	2	6
W. Lewes Dobinson ..	0	5	0	C. Craig ..	0	2	6
W. B. Harrison ..	0	5	0	T. Nasbet ..	0	2	6

## CHEMISTS AND DRUGGISTS AND ASSISTANTS OF NORWICH.

By Mr. Francis Sutton.

A. J. Caloy, London-street.	— De Carle.
C. Cubitt, Market-place.	— Fox.
W. Searby, White Lion-street.	— Goodenough,
Richard Buck Smith.	— Hill.
F. Sutton, Bank-plain.	— Lincoln.
J. E. H. Watson, Rose-lane.	— Mason.
— Blythe.	— Nuthall.
— Caubam.	

Total . . £3 10s. 6d.

## CHEMISTS' AND DRUGGISTS' ASSISTANTS AND APPRENTICES OF SHEFFIELD.

By Mr. J. T. Dobb.

	£	s.	d.		£	s.	d.
R. W. Watson ..	10	6	—	Atkinson ..	2	0	—
W. V. Radley ..	10	0	—	A. J. Appleton ..	2	0	—
J. T. Dobb ..	10	0	—	— Wright ..	1	0	—
W. Jervis ..	5	0	—	— Beasall ..	1	0	—
R. Bennett ..	5	0	—	— Bradwell ..	1	0	—
Clayton and Ellinor ..	5	0	—	— Dunnill ..	1	0	—
Joseph Wool ..	5	0	—	— Graham ..	1	0	—
Cubley and Preston ..	5	0	—	— Twates ..	1	0	—
— Clifton ..	2	6	—	— Morris ..	1	0	—
Thomas Major ..	2	6	—	— Otley ..	1	0	—
C. A. George ..	2	6	—	A. Wood ..	1	0	—
Edward Wiles ..	2	6	—	— Blacker ..	1	0	—
Thomas Lygo ..	2	6	—	— Bew ..	1	0	—
Joseph Watts ..	2	6	—	F. E. L. ..	1	0	—
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T. F. B.

Pharmaceutical Chemistry.

Mr. Young.

Christison on Poisons.

Mr. B. Keen.

A Manual of Chemistry.

Charles Concock.

Winslow on the Brain, 4th edition.

The following is a list of the books, etc., promised up to February, 12th, 1872. Number of volumes previously acknowledged, 270.

F. W. Steel, 233, Liverpool-road, N.—A Normandy's Gas Furnace. An Air-gas Burner.

The Proprietors of the CHEMIST AND DRUGGIST.—The CHEMIST AND DRUGGIST for 1869 and 1871; The CHEMISTS' AND DRUGGISTS' ALMANACKS for 1869, 1870, 1871, 1872.

Charles M. Footit, Great Marlrow.—Several old works on Therapeutics; Mohr and Redwood's "Practical Pharmacy;" Thomson's "Dispensatory;" Gray's "Supplement to the Pharmacopœia, 1821."

A. Richardson.—Several Pharmacopœias.

Taylor and Co., Little Queen-street, W.C.—Levy's "Blindness and the Blind;" a treatise on Typhology.

Dinneford and Co., 172, New Bond-street, W.—Bastick and Dickenson's "Annals of Pharmacy," Nos. I. to XXX. (January 1852, to June, 1854); Barne's "Chemical Pocket Book," 1844; Reid's "Chemistry" (illustrated); Parke's "Chemical Essays;" Gray's "Operative Chemist;" Kane's "Elements of Pharmacy;" "The Dublin Pharmacopœia," 1850; Rennie's "Pharmacopœia," 1826; "Pharmacopœia Roy. Coll. Phys.," 1788; "Gregory's Conspectus," 1836; Arnott's "Warning and Ventilating;" Fuller's "Pharmacopœia Extemporanea," 3rd edit., 1719; "Prussian Pharmacopœia," 1813; the CHEMIST AND DRUGGIST, 1862 and 1863.

Low, Son, and Haydon, 143, Strand.—Gray's "Supplement to Pharmacopœia, Redwood."

T. N. R. Morson, Esq., London.—"Opera Medica Thomæ Sydenham, cum supplemento;" "Antonii Musæ Brasauoli Index Refertissimus in omnes Galeni libros;" "Galenus Isagogici Libri, extra ordinem Classium Libri, et Galenus Ascripti Libri;" "Galenus Prima Classis, Naturum Corporis Humani, etc.;" "Galenus Secunda Classis, Materiam Sanitatis; et Tertia Classis, quæcunque ad Morborum, etc.;" "Galenus Quarta Classis, signa quibus Morbos dignoscere docet;" "Galenus Quinta Classis, eam Medicinæ partem, quæ ad pharmaciam spectat;" "Galenus Sexta Classis, eam Chirurgiæ partem amplectitur, quæ ad phlebotomiam spectat;" "Galenus Septima Classis, Curandi Methodum continet." Also some Specimens of Chemicals.

Longmans, Green, and Co., Paternoster-row, London.—Watts's "Dictionary of Chemistry:" vol. 1, Abichite, Conglomerate; vol. 2, Cowhydrine, Gytge; vol. 3, Hæmaphein, Mysorin; vol. 4, Nacrite, Tymiric Acid; vol. 5, Quadrant-oxide, Zymurgy. "Dictionary of Science and Art," by Brande and Cox: vol. 1, A; Future Tense; vol. 2, G; Poles; vol. 3, Poles and Polars, Zymotic. Millar's "Elements of Chemistry:" vol. 2 Inorganic; vol. 3, Organic. Dr. Ure's "Dictionary of Arts, Manufactures, and Mines," edited by Robert Hunt: vol. 1, A, Cymophane; vol. 2, Daguerrotype, Tynse; vol. 3, Macaroni, Zirconium. "A Practical Treatise on Metallurgy," by Crookes and Rohrig: vol. 1, Lead, Silver, Zinc, etc.; vol. 2, Copper, Iron; vol. 3, Steel, Fuel, Supplement. Crookes's "Select Methods in Chemical Analysis" (chiefly inorganic); Tyndall "On Sound"—course of eight lectures delivered at the Royal Institution of Great Britain; Miller's "Introduction to the Study of Inorganic Chemistry;" Dr. Wood's "Chemical Notes for the Lecture Room;" Dr. Wood's "Notes on Metals;" Bloxam on the "Properties and Treatment of Metals;" Odling's "Outlines of Chemistry, or Brief Notes of Chemical Facts;" Odling's "Manual of Chemistry," Part I.; Odling's "Animal Chemistry;" Odling "On Carbon;" Odling's "Practical Chemistry;" Tyndall "On Heat as a Mode of Motion;" Ganot's "Physics," translated by Dr. Atkinson.

Ferdinand Coles, F.C.S., 243, King's-road, Chelsea.—Parkes's "Chemical Catechism;" Lindley's "British Flora;" Harris's "Rudimentary Electricity;" "Translation of the London Pharmacopœia;" Buckmaster's "Experimental Physics;" Parkinson's "Chemical Pocket Book."

G. J. Owles, Halesworth—Solly's "Chemistry;" Fresenius' "Analysis;" Pritchard's "Infusoria;" Griffin "On the Blowpipe;" "British Pharmacopœia;" "On Gold—for the Emigrant," by Lecturers at the Royal School of Mines; Napier's "Dyeing;" "Patterson's Zoology;" Taylor's "Guide to Science."

George R. Durrant, Old Cross, Hertford.—Garrod's "Essentials of Materia Medica and Therapeutics," 2nd edition: Day's "Chemistry in relation to Physiology and Medicine."

W. C. Hayland, 21, High Ousegate, York.—The CHEMIST AND DRUGGIST, 1862, 1863, 1864, 1865; Abel and Bloxam's "Handbook of Chemistry;" "British Pharmacopœia;" Darby's "Wittstein's Chemistry;" "Year Book of Pharmacy;" Wood and Sharp, 1866.

S. Atkinson, Biarritz.—"The Dispenser's Vade Mecum," by J. Britten.

Dr. Wm. Frazer.—"Elements of Materia Medica;" "Treatment of Skin Diseases."

C. R. C. Tiehborne.—Set of Tubes Illustrating the Dissociation of Salts under Pressure; Set of Mounted Microscopic Objects Illustrating the different Starches; Samples of Xylol.

Evans, Lescher, and Evans, London.—A number of Specimens Illustrative of the Materia Medica of the United States' Pharmacopœia.

Charles Concock.—Winslow "On the Brain," 4th edition.





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#### SITUATIONS AT HOME.

**THE PROPRIETORS** of THE "CHEMIST AND DRUGGIST," anxious to make their Journal more than ever the medium of communication between Employers wanting Assistants, and Assistants wanting Situations, have decided henceforth to print that class of Advertisements on a separate sheet as well as in the body of the Journal, and this separate sheet will be forwarded post free to any address on the 15th of the month on receipt of a penny stamp. It will appear first on March 15th. The Proprietors will be much obliged if Chemists' Assistants will make this announcement known as generally as possible, as it is in their interest that the plan is proposed.

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#### DISINFECTANTS AT SEA.

The Board of Trade have decided to substitute Chloralum for the Solution of Chloride of Zinc, at present included in the scale of medicines and medical stores issued, and caused to be published by this Board, in pursuance of the "Merchant Shipping Act," 1867.

#### CHEMISTS AND JURIES.

**SINCE** the passing of the Pharmacy Act of 1868, the relative position of pharmaceutical chemists and chemists and druggists in regard to juries has become anomalous and illogical. It is not for us at this moment to inquire whether it was right or necessary in 1862 to exempt pharmaceutical chemists from liability to serve on juries. We have no doubt on the matter ourselves; but whether we had or not, we should be bound to assume the existence of such a necessity, seeing that it had been recognised by the Legislature. Now, that exemption was certainly not granted as a reward for passing the major examination of the Pharmaceutical Society; no such theory has ever been hinted at, nor would it be at all compatible with reason nor with the facts of the case. The only cause why at that time pharmaceutical chemists were included in the list of persons exempted from service on juries was that the list of their names was the only authoritative register of chemists and druggists in existence. The Legislature said in effect:—"We fully recognise the desirability of exempting chemists and druggists from service on juries; your reasons for asking that favour are well founded on the principle of regarding the safety of the subjects as supreme: but we cannot make the exemption in the name of chemists and druggists, because it is impossible to say exactly who is a chemist and druggist; there is no legal definition. Therefore, we must limit the favour to those who are distinctly enrolled as pharmaceutical che-



mists, and we extend it to them only on condition that they shall be actually practising as pharmaceutical chemists.

The position with regard to juries is unaltered to this day ; but the status of the trade is quite different. In 1868 the Pharmacy Act was passed, and that Act lays upon the Pharmaceutical Society the duty of preparing and publishing an annual register of chemists and druggists. Every individual chemist and druggist is therefore now defined, and there cannot be the smallest doubt that if the question were before Parliament now as it was in 1862, the whole body, or none at all, would be exempted from service on juries. The framers of the bill of 1868, perceiving the logical conclusion on this point, introduced a clause into that bill which was designed to extend the exemption to everyone on the register. The members of the House of Commons, who, it is needless to say were not vastly interested in the bill, and had not in their minds the Juries Act before referred to, very naturally looked upon the clause as an intruder, and on the instigation of Mr. Lowe, if we remember correctly, struck it out. With these facts before us, it does seem probable that if the proper representations were made to Parliament, the exemption would be extended to all persons on the register of chemists and druggists. Pharmaceutical chemists are not less, perhaps they are better, qualified to serve on juries than others ; they are not less—perhaps they are better—able to leave their businesses than others. And it cannot be doubted that great danger is always incurred when a chemist and druggist is obliged to leave his shop for several days in charge of an apprentice with very nebulous ideas as to the relative properties of quinine and morphia. This danger, however, as we said before, Parliament has already recognised, and it rests with the trade to say whether the House of Commons shall be petitioned to place all chemists and druggists on the same footing with regard to juries.

We refer to this subject because we hear from many correspondents accounts of instances when the danger we have just alluded to does actually occur. We believe it is a general wish on the part of the trade that exemption from jury service should be extended to all those on the register, and we need hardly remind those who do entertain this wish that if the favour is worth having, it is also worth asking for. We believe there is an extremely strong case to put before Parliament, and we think it not impossible that with some effort the boon might be obtained. We are willing to do all we can to aid chemists and druggists in this matter if such service will be acceptable ; and we particularly request in the first place that those among them who have any special views on the subject, or who can furnish instances or arguments either *pro* or *con*, will write to us. We shall be glad to hear from pharmaceutical chemists as well as from others, and, as we have no wish except to ascertain the feeling of the trade, we shall be glad to have the opposite view of the case put to us if it be held by any of our readers. Some of them may consider that the peculiarity of the business is not so special as to make it a fair request that they should be relieved from the duties of citizenship ; but we would ask those, if there be such, to look at the subject broadly, taking into account the large number of men in the trade who never get beyond an apprentice, and who are not in such a position that they can take a day's leave of absence whenever they care for it without inconveniencing themselves, or endangering the lives of others.

In conclusion we may add the following facts, which may be useful for reference :—

A special juror is entitled to one guinea for every day of his attendance.

A common juror is entitled to ten shillings for every day of his attendance.

The qualification for a special juror is that he shall be legally entitled to be called an esquire, or shall be a person of higher degree, or shall be a banker or merchant, or shall occupy a private dwelling-house rated or assessed to the poor rate or to the inhabited house duty on a value of not less than one hundred pounds in a town containing twenty thousand inhabitants and upwards, or not less than fifty pounds elsewhere, exceptions being made with regard to farmers.

The persons exempt from serving on juries may be generally summarised thus :—Members of either House of Parliament, members either of the clerical, legal, or medical profession, legal functionaries of every grade from judges to policemen. Pharmaceutical chemists, officers of the army, navy, militia, and yeomanry on full pay, pilots, &c. ; and members of corporations are exempt so far as relates to the sessions held in the county in which their corporation is comprised. The household servants of her Majesty and her heirs, also officers of the Post-office, Customs and Inland Revenue.

#### CIVIL SERVICE REFORM.

IN another column will be found a special report of the discussion between the Right Honourable Robert Lowe, Chancellor of the Exchequer, and a deputation representing the various retail traders of the metropolis, which waited upon him on Friday last. The deputation had been organised by the National Chamber of Trade, heretofore known as the Metropolitan and Provincial Association for the Defence and Advancement of Trade Interests. In passing we must congratulate this vigorous association on the substitution of a short and effective title for the thirteen-worded designation which it has dropped, and which must have sorely weighted its energies hitherto. We shall be glad to see the National Chamber of Trade obtain such an influential position as an institution with that title should obtain in this country.

It may be well to state here exactly the principle upon which we have an indefeasible right to base our opposition to the Civil Service Co-operative Stores as at present conducted. We state this basis in the words of Mr. W. H. Smith, M. P., who presided at the recent annual meeting of the association we have named, and who, in the course of his speech on the subject, said he ventured to assert that the tradesmen of the metropolis did not desire to take up the absurd position of opposing co-operation altogether. They were of opinion that everyone had a right to buy in the cheapest market and to enter into combination to satisfy his wants, provided he did so in an honest way. But they did not think it right that gentlemen receiving large salaries from the public as payment for their services should be also allowed to receive large salaries as the managers of a great trading concern ; and this subject, he thought, should receive the consideration of the superiors of the Civil Service.

With such views as these the Chamber asked Mr. Gladstone to hear their grievances, and Mr. Gladstone handed them over to Mr. Lowe. To refer a deputation to Mr. Lowe is generally equivalent to a point-blank refusal to entertain the petition, whatever it may be, which the deputation may have to present. The right honourable gentleman has a cynical contempt for anything like sentimental justice, and an apparent delight in any exercise of refined cruelty. He has thus come to be regarded by his coadjutors as a particularly useful member of a cabinet, whose members are generally supposed to be afflicted with rather soft hearts. Mr. Gladstone has never yet found it possible to break through a logical difficulty, and therein lie both



his strength and his weakness. But it would need to be a marvellously fine logical net indeed, through the meshes of which the Chancellor of the Exchequer could not contrive to wriggle. Yet it was perhaps with less than usual satisfaction that Mr. Lowe reflected on the interview to which we now allude, as he walked from Downing street to the House of Commons, after the deputation had left him. He had been exercising his genius in the defence of what he, more than any living statesman, hates and fights against, namely a respectable corruption; and he had supported his arguments with a clincher—the *non possum*—which he of all men must dislike to employ. Probably the deputation did not expect from Mr. Lowe a cordial endorsement of their opposition, but they expected that quite as much as to hear from him that neither he nor any other of Her Majesty's ministers had sufficient authority over the civil servants to prevent a system of corruption and injustice, provided, of course, that the existence of such a system could be established. Unless Her Majesty's ministers have as much authority over the civil servants in their respective departments, as the head of a mercantile firm in the city has over his *employés*, we might just as well have no ministers at all, but leave the jacks-in-office to govern this country at their own sweet will. We object entirely to this modest assumption of powerlessness on the part of those to whom the management of state affairs has been delegated. It is utter nonsense to refer us to parliament as the only competent authority over civil servants. More logical it would have been to propose a general election, for the ministers are responsible to parliament only in exactly the same sense as parliament is responsible to the country. Parliament, for the time being, represents the nation; government, for the time being, represents parliament, and to the existing government, parliament delegates all executive functions. Her Majesty's ministers, it is true, are often severely criticised, and the parliament which gave them their position may remove them from it, if they lose confidence in them. But it would be utterly absurd to hold the ministers responsible for the acts of their departments, unless they had absolute power over their subordinates. Therefore we think the Government is wrong in declining to make its own enquiry into the conduct of its own servants, when properly authenticated complaints are alleged against them. We are quite aware that the next step to take in the crusade against these stores is to appeal to parliament, now that we find the Government declines to help us. Therefore we can hardly bring ourselves to thank Mr. Lowe for his recommendation that we should thus address ourselves to our representatives. From them we look for earnest and energetic action. The few, almost indignant, sentences which the Honourable Arthur Kinnaird spoke to Mr. Lowe at the interview of the deputation, convince us that we shall not always meet with such cynicism as the Chancellor of the Exchequer can so well assume.

Mr. Lowe was correctly informed when he stated that the Stores had resolved to make their business more exclusive. At the recent half-yearly meeting at the Cannon Street Hotel such intentions were undoubtedly expressed. But Mr. Lowe's innocence is too exquisitely refreshing. He knows human nature far too well to suppose that those excellent managers and directors will readily and voluntarily surrender the salaries of 200*l.*, 400*l.*, or 600*l.* per annum, which they now derive from the Co-operative Stores. They have other reasons for such self-sacrifice. They know well enough whether their system of official work will bear the light of a searching investigation, and towards that we now approach. The civil servants them-

selves have stirred up the quarrel, and we will fight it through. The disclosures of the *Mægera* commission have revealed a system of business in the offices of the Admiralty which would not be tolerated a single day on this side of Temple Bar, and it is not likely that investigation will stop there. Every government department wants overhauling, and the taxpayers have an overwhelming right to demand that in those happy hunting grounds, as elsewhere in this busy world, the principle shall obtain of "a fair day's work for a fair day's wage."



#### DR. WILLIAMS ON CONSUMPTION.\*

IT is not with the mere object of complimenting Dr. Williams that we express the gratitude which both the profession and consumptive patients must feel for the publication of a volume giving the results of such an extensive, and on the whole highly successful practice as his has been in a disease which, according to the Registrar-General's returns, is responsible for an eighth of all the deaths in this country. Whatever Dr. Williams may have to say concerning consumption must be of importance, for he speaks with the authority of one who for forty years has devoted his whole attention to this class of cases, and has probably been consulted by more patients, in every stage of consumption, than any other living medical man. The book before us gives the views to which the doctor has arrived as to the nature of consumption, very elaborate statistics deduced from the cases which have come under his care, and lastly a general outline of the methods of treatment which he has adopted. The statistical portion of the work has been very carefully performed by Dr. C. Theodore Williams, son of Dr. C. J. B. Williams, who also contributes a few other chapters.

The author treats very fully on the nature of consumption; on its origin and special characters, and on the physiological appearances which it presents. He gives fairly and with sufficient fulness the views which have been, or are held by other observers of this disease, and in some respects he comes to new conclusions. If we may attempt to express in a sentence the ideas to which Dr. Williams inclines, we should say that he believes pulmonary consumption to be due to a degraded condition of the *bioplasm* or germinal matter, which *bioplasm* should produce healthy tissue, but may, by family predisposition, by inflammatory action, or by other causes, be so upset as to be able only to produce the tuberculous matter on the lungs which is the chief characteristic of the disease. In this condition he calls it *phthinoplasm*. The plasma is that nutritive material which every living being has the power of forming, and which converts the food into cells for the formation of flesh, nerves, and blood. When healthy this plasma is called *bioplasm*, that is tending to life; in consumptive cases it becomes *phthinoplasm*, that is tending to decay.

The author considers that the statistics which he is able to publish justify him in considering that the disease has been to some extent ameliorated. This may be so; but it must be confessed that the records which any consulting physician can show are of necessity most meagre. Dr. Williams estimates that he has notes of more than 25,000 cases in which he has been consulted. From these 1,000 cases have been selected from which to deduce the statistics that are given. The principle guiding the selection of these 1,000 cases is that each must have been under treatment twelve months and upwards. It is acknowledged that this plan excludes such cases as have been completed by death within a year, and it is calculated that such may form from 3 to 5 per cent. of the whole mass; but we certainly cannot look with so much hopefulness, as Dr. C. T. Williams seems to do, on the large numbers who come to see the

\* "Pulmonary Consumption: its Nature, Varieties, and Treatment." By C. J. B. WILLIAMS, M.D., F.R.S., and C. T. WILLIAMS, M.A., M.D. London: Longmans.



physician once or twice and then disappear. We can hardly think that it often happens that these are getting better. Nevertheless, the figures which are given, and the illustrative cases do certainly prove one thing very satisfactorily: namely, that if proper remedial measures are applied early and continually there may be great hope of prolonged life if not of complete recovery.

The staff of life for consumptive patients, and the physician's tower of strength is, in the opinion of Dr. Williams, cod-liver oil. This remedy he advocates with energy, almost with enthusiasm, and it may well happen that his judgment with respect to other specifics may therefore be a little warped. But his great experience of the benefits of cod-liver oil is very satisfactory; and we may note that now, not less than twenty years ago, Dr. Williams continues to recommend the pale oil, the more fluid the better. He considers the solid margarine and stearine to be inert, and he speaks very highly of the fine oil imported from Norway, which he says "is remarkably free from unpleasant flavour, and has the advantage of keeping better than the Newfoundland oil, its price being about the same." An orange tonic with a little diluted phosphoric acid, Dr. Williams prefers as the vehicle for the administration of the oil, which should be given soon after the early meals of the day, and should not exceed a tablespoonful for a dose. Of course there are conditions of the disease when oil cannot be taken, and in his summary of treatment methods are proposed and prescriptions given for the various complications which occur with consumption proper.

We need only add to this notice that for its practical and theoretical information Dr. Williams's work is one which no practitioner can afford to do without.

#### VINES AND WINES.\*

THE authors of this treatise tell us that the literature of oenology comprises some six hundred volumes, two hundred of which they claim to have consulted in the preparation of their own work. But they have not by any means contented themselves with such second-hand knowledge as this. Their book is most genuinely original, and records the results of their investigations in the laboratory and amid the European vineyards. We have little doubt that this volume will be regarded as the standard English work on the subject by those whose business is connected with wine, and we are quite sure that the painstaking labours of the authors are of such value that their book will take a high place as a contribution both to technical and social science.

The authors explain in their preface that they "have had amongst their aims the accomplishment of one of the most benevolent intentions of the legislature; namely to make accessible to the people at large, the wines of all countries which can be used as beverages, and which by the voice of science and the practice of entire nations are declared preferable by far to distilled spirit or to wines fortified by such." In looking through the book for the accomplishment of this purpose we are obliged to confess ourselves disappointed. It is the only unfavourable criticism we have to make on the work, but it that sentence which we have quoted had not been in the preface we should still have remarked that, with the large experience which during their researches the authors must have acquired on the subject of adulteration and sophistication of wines, it is to be regretted that they have touched so lightly on the foibles of the wine trade. It is true that they persistently impress on their readers the importance and superiority of pure wines, but we are at a loss to see in what way their labours, just as they stand, will make pure wines any more accessible to the people at large than they now are. We should have been glad, too, to have seen some calculations worked out more definitely as to the commercial value of the various kinds of wine, and with an M.D. as one of the authors, we might have looked for a little enlargement on the medicinal qualities to be ascribed to wines both generally and particularly. We are heartily in accord with the authors and with "the voice of science" in believing that natural wines would be im-

mensely "preferable to distilled spirit or to wines fortified by such." We believe that those might perhaps gladden the heart of man, as they were said to do of old; these, we are certain, take far more comfort out of his head and his stomach, than ever they put into his heart, and therefore we regret that the aim alluded to, has not been more fully accomplished.

The treatise, however, gives us a most valuable collection of facts. First of all, it treats of the culture of the vine generally, and the ordinary conditions of the vintage. Here we find some important remarks on the most suitable time for gathering the grapes. It seems that consumers are so particular about the tints of their various wines, that in many cases a sacrifice of quality has to be made to this prejudice.

"The colour required by the trade can only be obtained from grapes at a certain stage of maturity; and that stage does not coincide with the maximum maturity which the grapes can attain on the vine. Consequently, the highest quality of the wine is abandoned in favour of a conventional dye; and the unripe wine has to remain years in barrels and bottles before it acquires the qualities which fit it for use. The Champagne grapes, on the other hand, are not permitted to attain the stage of highest maturity, because it is conventional that the effervescent wines of that country shall be as pale as possible, and not have the slightest tint of redness."

Petiot's process for the production of wines is fully described in this part of the volume; and as it is a system whereby a large proportion of water can be mixed with wine, so as to deceive the palates even of connoisseurs, we are inclined to hope that some day the general public may share in the profits, as they doubtless do already, in the products of that process.

We must not do more than mention the very elaborate manner in which the chemistry of wines is discussed, and in which the processes of analysis are described. We may, however, remark that the authors do not accept the theory that the alcohol as it is contained in wine is not exactly the same as alcohol when extracted from wine. The indubitable difference in taste between the alcohol naturally present and the alcohol added, which they admit, they endeavour to account for by remarking on the pertinacity with which other substances cling to alcohol. We would also remark that the authors describe a new process for the estimation of ethers in wine; but we cannot attempt even to abstract the description in this review.

The remainder of the book, which also is the larger portion of it, describes the production of the wines of France, Germany, Hungary, Spain, Portugal, the Atlantic islands, Italy, Greece, Asia, Africa, America, and Australia. We shall not follow the authors step by step through all these vineyards, but shall conclude our notice with one or two of the many interesting passages which we have noted in our progress through their instructive pages. First, we select what we may term a consolation to those who do not drink Burgundy. The grapes have been pressed, and the juice is placed in large *caves*, or vats, where it stands to ferment.

"Now comes a phase in the production of Burgundy, which is unparalleled by any proceeding in any wine-producing country. The fermentation is complete, and the wine has to be drawn; but it is desired to impart to the wine all the colour that can be extracted from the husks. For this purpose the husks which are collected in the *chapeau* have to be thoroughly mixed with the alcoholic fluid. The top of the *chapeau*, which is mostly a little rotten and sour, is therefore taken off, and two or three men, having laid aside their clothes, mount to the top of the *chapeau*. The *chapeau* is so dense that the men can stand upon it for some time. Each of the men works a hole with one foot through the crust; he then gets his other foot through, and gradually sneezes with much trouble in causing his body to sink down through the crust into the wine below. While thus engaged, the whole *chapeau* is broken to pieces and worked together with the wine. These men now work the whole of the murk, and mix it thoroughly in all directions with the wine for about half-an-hour. They then emerge from the liquid covered with a dark red dye, and after wiping their bodies with the shirt they pulled off, they put on a fresh shirt and redress. After the lapse of several hours, the *chapeau* has again risen as before. The men then again descend into the fluid, and mix it with the *chapeau* as before. During this operation the men perspire profusely, not only from the intense labour which they perform, but also from the poisonous effect of the carbonic acid gas exhaled by the fermenting mass. They are mostly deadly pale or blue, and pant and hang their heads over the edges of the *caves*, gasping for fresh air."

So much for Burgundy. Now for the fashionable Moselle:—

"Owing to the natural want of flavour, the producers of Moselle and the merchants on their track have devised an artificial flavour which imitates, to a certain extent, the flavour of wine made from the muscatel grape. This is the tincture of the flowers of the elder shrub. Of this tincture a small quantity is added to common Rhine wine or

\* "A Treatise on the Origin, Nature, and Varieties of Wine." By J. L. W. THURICUM, M.D., and AUGUST DUPRE, Ph.D. London: Macmillan.



Moselle, whereupon it assumes the peculiar flavour which anyone conversant with the process of its production recognises at once. It must be declared with emphasis, that there is not a grape of muscatel grown upon the Moselle fit for wine making; that there is not a single barrel of wine made there which naturally has the muscatel flavour; and that all the wine having the flavour which imitates it, is made up with tincture of elder-flowers. There can be no objection to the use of this tincture, provided that it be known to the consumer that he pays for elder-flower and not for muscatel. Elder-flower is in no way prejudicial to health, and has from time immemorial been used to make a high-flavoured tea for the treatment of slight indispositions.\*

#### DR. WOOD'S CHEMICAL NOTES.\*

Those who take an interest in the progress of natural science teaching must regard the abundance of scientific text-books as a matter of satisfaction; while at the same time they have to regret that most of them are far below the standard which they should attain as companions of the student of nature. However, we are thankful that chemistry is not the least fortunate in this respect; although failure in attempts to improve the literature of the science are by no means uncommon. That the *desiderata* of the student often assume a very different aspect to different teachers, is very evident from the variety of methods for teaching the elements of the science that are brought before the public from time to time. But fortunately it is recommended, almost without dissent, that this truly experimental science should be studied experimentally. Dr. Wood advises "beginners who wish to study chemistry, not to commence by reading a book on the subject; but to attend first a course of some eight or ten elementary experimental lectures on, say the 'Components of the Atmosphere,' thus acquainting themselves with the apparatus, names, modes of thought and expression common to the science before they read it." So far we agree with him thoroughly, but we are disposed to go further, and recommend the student, whenever it is practicable, to go from the lecture-room to the laboratory; or at least to make it a rule to acquire his chemical knowledge, not by simply reading and answering questions, but by seeing and examining for himself the substances of which the science treats, their behaviour with one another, and the manner in which they are influenced by the forces which come within the range of chemistry. But we are fully aware that many students are obliged to pursue their studies under great disadvantages, and have neither the time nor the opportunities which are essential to a proper study of the science. Moreover those whose ambition it is to meet the requirements of an average examination, care but little for practical knowledge, and take no trouble to acquire it. They simply want to be able to answer questions of the regular set class, whence the demand for that peculiar sort of learning most appropriately termed book-knowledge. Dr. Wood's work has all the appearance of a book intended to supply this demand, with such a moderate accompaniment of experimental teaching as is consistent with lecture-room study. This edition is an enlargement of its predecessor, and contains some additional questions. The arrangement, which is the same as in the former editions, is perhaps the best the author could adopt for his purpose, and he has succeeded in compressing an immense amount of information into a very small space; but not without some corresponding disadvantages. Merely as chemical notes for the lecture-room, we should expect the work to be devoid of anything like detail, and in such a small compass we should not wonder at its being superficial. But we do expect—and not unreasonably in a third edition—to find accuracy, and yet throughout the book there are numerous instances of carelessness on the part of the author. On page 78 he states that oxygen is necessary for combustion; on page 6 he gives an instance of combustion in which oxygen takes no part—the combination of iodine and phosphorus. It is scarcely necessary to say that numerous experiments might be given to show the inadvisability of continuing the use of the old terms "supporter" or "non-supporter" of combustion in their original acceptation, as we understand the author to employ them. On page 54 it is stated that "it has been found by accurate experiments that gases expand regularly for every increase of temperature." *Accurate* experiments have shown that the co-efficient of expansion is

slightly increased at high pressures. The observed variation is slight, but it is not meaningless, and why lead the student to understand that it does not exist? On page 66 the author states that "every kind of artificial light and heat is the result of chemical action." In the experiment of lighting a piece of German tinder by the pneumatic fire syringe (page 5) the heat is artificially produced, and is not the result of chemical action. However such statements as those to which we have referred may be regarded, there is no excuse for such an inaccuracy, such a scientific blunder, as is expressed in the following passage which we take from page 27, under the heading of "The Dew-point":—"The warmer the air the greater the amount of the vapour of water it is capable of retaining in solution; and the colder it is, the smaller the quantity it can contain." We cannot see how it is possible for anyone acquainted with the principal facts concerning the tension of aqueous vapour to offer such an antiquated explanation of the cause of the deposition of dew. Possibly the author may be thoroughly acquainted with the facts to which we refer; we can only say that the language which he employs is identical with that which was employed for a similar purpose, before it was known that the air in this case was not in any sense of the word a solvent; but that this natural phenomena may be imitated in a Torricellian vacuum. Considering that the volume before us might be made useful by a thorough revision, but that in its present state it is not a desirable addition to the scientific literature of the day, we trust that in the fourth edition Dr. Wood will favour his readers with science of a more modern date.

#### THE HAIR AND ITS HISTORY.\*

If we consider the intense interest which nearly every human being takes in his or her hair, and if we consider the disappointments, the grief, the anxieties, which that hair is overlastingly arousing, we may well wonder that so few medical practitioners have come forward to make this department of the human frame their special study. Who is there in the medical profession whom we regard as the Hair Doctor *par excellence*? Almost entirely the medical ministry to diseases of the hair is left to the gentlemen who have chosen skin diseases as their darling object of study, and with them the hair is only regarded as quite a secondary matter; only regarded at all, indeed, because it so happens that injury to the hair is a frequent result of many skin diseases. But a doctor who should become famous for his treatment of the hair, who should be looked up to as the authority to consult in all times of its adversity, would be certain to secure such a tremendous practice as has never before been accorded to any individual. Young men and maidens would be his best customers, but old men and children would also come in crowds. For lack of him, the lady with the wrong-tinted hair, and the gentleman with his whiskers all inside must now perforce consult the editor of the *Family Herald*, or kneel to Mrs. Allen. In his absence, quacks make vast fortunes, and many a local paper almost lives on the tempting announcements of hair dyes, restorers, cultivators and depilatories which fill so large a part of its columns. It is notorious that well-advertised hair preparations are almost invariably successful. Ask Mr. Rowland!

No such ideas as these entered into the mind of Dr. Godfrey when he planned his "popular treatise" on diseases of the hair, nor when he dedicates that "popular treatise" (as he has done) "to the heads of Great Britain." If we were writing this review for a medical journal we should feel called upon to denounce the publication of this "popular treatise," as a crime against the etiquette of the profession. We should suggest that Dr. Godfrey ought to eliminate from his treatise all the anecdotes which degrade it from the character of a scientific book, and should condense the remainder into an essay to be published in "our" columns, or to be read in some one of the medical holes and corners where a dozen old grey heads do congregate, and take their vote of thanks as a sufficient reward for his pains. That would be the strictly professional

\* "Chemical Notes for the Lecture-Room." By THOMAS WOOD, Ph.D., F.C.S., etc. Third edition. London: Longmans, Green, and Co. 1871.

"Diseases of the Hair: A Popular Treatise upon the Affections of the Hair System." By BENJAMIN GODFREY, M.D., F.R.A.S. London: Churchills.



course to have taken, but for our part we do not blame the author at all for having deviated from such unpromising orthodoxy. Our quarrel with him—as far as we have any—is that he has not been half “unprofessional” enough. Like an inexperienced billiard player, who makes a hesitating stroke in the hope that if he misses the hazard he may get the cannon, Dr. Godfrey has apparently written his treatise with an idea that if it misses the public it may hit the profession. The effort to serve two masters is apparent throughout. As a popular treatise on a toilet subject, one might have expected to meet with at least a decently bound book; and the price charged would have admitted of a little luxuriance in that direction. But no! its medical character must be kept up, and therefore a whitey-brown sugar-paper cover has been selected, which, before the book can be read through, presents the necessary repulsive appearance. Within, it is replete with most interesting facts concerning the hair of humanity from the earliest ages, which can only have been collected by great industry and patience—that part is for the public; but the descriptions of diseases are in many cases only comprehensible if the reader has been at least partially educated in medicine, and therefore we presume this part is intended for the profession. The paragraphs headed *Treatment* are in many cases most reprehensible, considering that the book is expressly addressed to lay readers, and that these in managing their hair, are very fond of experimenting in secret. Thus, we find chloride of arsenic, cantharides, bichloride of mercury, nux vomica, strong sulphuric acid, tincture of iodine, and tersulphuret of arsenic, all referred to as remedies in certain cases, either for internal or external use, and in scarcely more than one instance is there a word of warning as to the danger of these powerful medicines. In one case (dandruff) we are told to use cod-liver oil externally, internally, and eternally. We may here mention a curious remedy for dandruff, which is published in a recent number of the *American Journal of Pharmacy*. The writer (Mr. John L. Davis) put one ounce of flowers of sulphur in a quart of water. The mixture was allowed to stand for a few hours, and was in the mean time repeatedly agitated. The clear liquid was then poured off, and the head saturated with it every morning. In a few weeks every trace of dandruff had disappeared, the hair became soft, and glossy, and now, after a discontinuance of the treatment for eighteen months, there is no indication of the return of the disease. Mr. Davis says, “I do not pretend to explain the *modus operandi* of the treatment, for it is well-known that sublimed sulphur is almost or wholly insoluble, and the liquid used was destitute of taste, colour, or smell. The effect speaks for itself. Other persons to whom it has been recommended, have had the same results.”

To return to Dr. Godfrey's work however, we must confess that in these remarks we have scarcely done justice to the wonderful array of facts which the author has collected from biblical, classical, medical, and all other literary sources. *THE CHEMIST AND DRUGGIST*, has evidently been consulted, for on page 156 we find a reproduction of the analysis of hair restorers which we published some two years ago. The writer, however, does not honour us by naming the source of his information.

Hair “is not a circular body of uniform diameter, whose surface at each end is a circle, parallel to that at the other end.” We should like to catch the man who ever said it was. That sentence is one extracted from a chapter written when the scientific end of the see-saw was uppermost, but speculations on the character of persons, deduced from the colour of their hair, or their beards, which occur in one of the later chapters, although there is respectable precedent for such nonsense, is only suitable for a “popular treatise.” Neither do we accept as a scientific statement the author's expression of belief that “a beard is an outward and visible sign of a lower mental organization.” It may be so, but it is not proved by the fact that Byron, Milton, Thiers, Dante, Johnson, Burke, Sheridan, and Goldsmith, were “hairless as girls.”

#### THE ART OF COOKERY.\*

If a stranger might judge of our habits from our bookshelves, he might almost come to the conclusion that pills

and poisons formed our daily food, while chemical analysis served both for occupation and recreation. Messrs. Longmans, Green, and Co., have formed a more rational conclusion, however, and have submitted to our notice a new cookery-book, the production of a French gentleman who, we believe, has the reputation of being about the chief gastronomic artist in Europe. To compliment or to condemn the writing of such an authority as M. Urbain-Dubois, the *chef-de-cuisine* to the Emperor of Germany, on the processes of cookery, would be on our own part an indication of a tendency to rush upon ground where angels might reasonably fear to tread.

We are not authorities on dinners. Men must eat, it is true, but that necessity does not include the desirability of making one, two, three or four costly ceremonial observances every day, day after day, until the silly repetition is ended by death, and the worms take up the story in turn, and feast on the poor carcase, not with the same surroundings, but with an exactly corresponding appetite and enjoyment as he possesses who fares sumptuously every day. The perfection of the art of eating was possessed by Adam and Eve when they lived on the fruits which grew in the garden of Eden; but when Eve took the one fruit which she should have left, she took the first step in that downward course which has descended through all the stages of animal food to horse-flesh, high venison, and oysters; and which has so degraded the gentle feelings of the soul that for the sake of a caprice of the palate one animal is slowly bled to death, and another is placed in a saucepan and boiled alive amid inconceivable tortures. If this moralizing seems like far-fetched fancy, let anyone picture to himself the extremes we have indicated, and shudder:—Adam, refreshing himself with the luscious fruits of an Eastern garden, and his wretched representative in these days, licking from its shell the peppered and vinegared and slimy oyster, and washing down the scarcely dead reptile with London stout from a pewter pot. Which strikes the intelligent observer as most harmonious with man's sublime and complicated nature?

On a memorable occasion, Mr. Lowe was taunted in the House of Commons with the assertion that he had tried to fight against the fates and the destinies, and had found them too strong for him. He replied that he did not fear the fates and the destinies, but that he yielded, not to them, but to the littlenesses, the meannesses, and the shabbinesses which were around him. It is not the fates that have driven us from the fruits of the garden, and forced us to find our nourishment second-hand in the animal creation. Man's appetite has run wild and led him thus astray, and we who see what should be, must perforce submit. If it must be so, then, let us have all the elegance which artistic cookery can afford. As a rule, true elegance is no more expensive than repulsiveness; it is the flash article which costs the most. M. Urbain-Dubois is an enthusiastic cook and he unfolds the secrets of his art with all the earnestness of a reformer. His book contains 1,112 articles, and although a slightly bilious feeling possesses the conscientious critic as he rises from considering these 1,112 dishes, yet it must be said that M. Urbain-Dubois' cookery is very much what we want in England. The most tasteful method of serving almost every dish is described, and in a great number of cases is excellently illustrated. The wood-cuts in this volume are remarkably good; but one of the plates (*diner servi à la Française*) is rather remarkable for its comical defiance of perspective. It is certainly to be hoped that the publication of this handsome work will help to break through the conservative prejudices which still cripple and limit culinary genius of the middle-class ladies of Great Britain.

#### THE METRIC SYSTEM.\*

It is but lately, in commenting on Professor Redwood's scheme of designating weights and measures by proportional parts instead of by fixed quantities in any new edition of the *Pharmacopœia*, in order, as he urged, to pave the way for the introduction of the metric system, that we protested against any intermediate steps in the promotion

\* “The Household Cookery Book.” By URBAIN-DUBOIS. London: Longmans.

\* “A Synoptic Table with Diagrams, showing the exact size of Weights and Measures of the Metric System.” By C. H. Dowling, C.E.; with handbook by James Yates, M.A. Edinburgh and London: W. and A. K. Johnston.



of such a consummation. But we then pointed out that, seeing that ten is, and ever must be now, the standard of enumeration for the civilized world, it is a matter of certainty that our systems of coinage, weights, and measures, will be, sooner or later, brought into correspondence with that standard. And seeing further, that the metric system is the one already largely employed by scientific men in all countries, that it is in fact the only decimal system which has been completely adapted to all processes of estimation, we make no doubt whatever that it is the system which will eventually be adopted in this country. We therefore conceive it to be very desirable that all classes should be familiarised with its characteristics, and we have seen no means so well calculated to secure this result as the very handsome chart designed by C. H. Dowling, C.E., and lithographed and published by Messrs. W. and A. K. Johnston, of Edinburgh, for the International Decimal Association. If this chart were hung up in schools and public institutions (and that is no doubt the object), it would soon educate the public to an appreciation of the theoretical beauty and practical simplicity of the metric system, and we hope our remarks will aid in promoting this result, and thus bring about earlier the ultimate introduction of the system itself. The chart represents the various measures of length and capacity, and the series of weights, drawn to the exact size, and thus at a glance the relation of one to another is evident. The origin of the metric system is shown by a drawing of the globe with a quadrant marked upon it. Then the metre itself is given with its divisions, and it is then shown how the capacity of the litre is calculated from the cubic decimetre. Down the centre the various units are placed, and to the right and left are their divisions and multiples respectively. A little pamphlet, by James Yates, M.A., accompanies the chart, and carefully explains each series. No education can be deemed finished unless the metric system has been mastered, and in that regard we have no hesitation in directing the especial attention of the managers of educational institutions to the chart which we have very briefly described. We may add that the price of this excellent work is, in our opinion, very moderate.

A meeting was held at the Mansion House on the 17th ult., to consider the propriety of adopting in England the metric system of measures, weights and coins. In the absence of the Lord Mayor, the chair was taken by Mr. Sheriff Bennett. The first resolution was as follows:—"That in the opinion of this meeting the introduction into the United Kingdom of the metric decimal system of weights and measures, which is already in use in a large number of countries, would greatly facilitate commercial intercourse, and introduce economy of time and labour in practical business." The chairman devoted himself chiefly to the manufacturers' view of the question, and gave forcible examples from his own trade experience of the value of the metric system of weights and measures. Mr. Brown pointed to the example of "clear and strong-minded Germany" in adopting the system, and Sir J. Lubbock advocated the proposed change on the broad grounds of its necessity in carrying out our banking and commercial operations all over the world. Seeing, he said, that the metric system was rapidly being adopted everywhere else, it would not do to have England tied to an obsolete and cumbersome system of weights and measures. General Strachey testified to the advantages which had resulted from the introduction of the metric system in India, and the Rev. Mr. Jowett, head-master of the Bath-street Middle Class School, recommended its adoption for educational purposes.

On the other side, we noticed among recent utterances that in his inaugural address the President of the Institution of Civil Engineers (Thomas Hawksley, Esq.) made certain remarks respecting the system which are worth quoting, coming from so experienced an authority, but which show how careless even such able opponents may be when they argue against an innovation. Mr. Hawksley described the "metric" as "one of the worst founded and most perplexing measures of length with which it has been my fortune to become acquainted. A measure which bases its claim to universal acceptance on the intangible ground that its length is, by its own unprovable assertion, exactly one ten-millionth part of a quadrant of the earth's equatorial

circumference! Nor can I conceive on what sufficient grounds it is being attempted to introduce the measures of France into use in this kingdom. The English unit of length, the yard, is just as capable of being referred to a natural standard as is the French unit, the metre; whilst the English unit, either as the yard or the foot, has been adopted and is used by far more millions of people than are now using the French unit. In Russia, in the United States, in Canada, in the East and West Indies, in Australia, and throughout the British colonies in which the English language is spoken, the established English measure of length is exclusively employed, and these are the countries in which fully four-fifths of the commercial business of the world is carried on. Nor does the 'ten finger' system of decimals, frequently employed as an argument in favour of the introduction of the metre, confer any advantages which are not more than counterbalanced by its disadvantages."

In answer to these remarks we may say that the metre is the ten-millionth part of a quadrant of the earth's meridian, and not of its equator; this is not an unprovable assertion; the yard is not as capable of being referred to a natural standard as the metre; while the fact that the metric system is a system, whereas our yard has no relation whatever to our gallon and our pound: and the fact that the former is gradually taking the place of the latter in all scientific calculations, are arguments which may well be placed against the one adduced, that at this present moment our measure of length happens to be more extensively employed than the one which is steadily, but surely, taking its place.

#### LITERARY NOTES.

DR. BALTHAZAR W. FOSTER, of the General Hospital, Birmingham, has published in pamphlet form an able and earnest lecture recently delivered to a popular audience in Birmingham on "The Prince's Illness: its Lessons." We quote one of the introductory paragraphs:—

"There was a time when every malady was a mystery in its origin—when pestilence walked in darkness; but this is no longer. We have arrived at a knowledge of the causes which produce these diseases, and we particularly well know the causes which produce such attacks as that from which the Prince is still suffering. Having gained a knowledge of the conditions which can develop the disease, we have the power, if we use our knowledge aright, of preventing it. Why, then, do we suffer this evil to exist? It is difficult to say. We know that the disease is propagated mainly by sewage-polluted air and sewage-polluted water. But, notwithstanding such knowledge, we allow, all over England, water to be polluted and the air of houses to be poisoned. The result is that we have 120,000 people laid up with typhoid fever every year, and some 20,000 persons killed."

The dissemination of such facts as are contained in this lecture is an imperative and an important work, and it is a labour in which physicians all over the country should take a leading part. We hope to see more of them follow in the steps of Dr. Foster, and by constant agitation, rouse the nation and the legislature to a sense of the necessity for prompt and comprehensive measures to prevent such a lamentable waste of human life, as is now acknowledged to result from social and individual ignorance and carelessness.



Queries received after the 10th of the month cannot be attended to in the immediately succeeding issue. The Editor will endeavour to obtain any required information for correspondents, but he cannot undertake to send answers through the post.

COLOURED FIRES.—A member of the German artillery corps gives the following formulae for making coloured fires:—

1. White light: 8 parts saltpetre, 2 parts sulphur, 2 parts antimony.
2. Red light: 20 parts nitrate of strontia, 5 parts of chlorate of potash, 6½ parts sulphur, 1 part charcoal.
3. Blue light: 9 parts chlorate of potash, 3 parts sulphur, 3 parts carbonate of copper.
4. Yellow light: 24 parts nitrate of soda, 8 parts antimony, 6 parts sulphur, 1 part charcoal.
5. Green light: 26 parts nitrate of baryta, 18 parts chlorate of potash, 10 parts sulphur.
6. Violet light: 4 parts nitrate of strontia, 9 parts chlorate of potash, 5 parts sulphur, 1 part carbonate of copper, 1 part calomel.—*Druggist's Circular*.



**RUBY GLASS** is produced by the addition of suboxide of copper to the glass. This ingredient can be got by adding grape sugar in solution to sulphate of copper, then adding caustic potash in excess, then boil. The deposit of suboxide of copper is separated by filtering and washing.

**PARISH ARRANGEMENTS.**—In reference to a paragraph in this column last month, we are informed that pharmaceutical chemists are *not* exempt from serving as overseers, nor from the discharge of other parochial duties.

**C. B. Allen (Penzance).**—We shall keep your letter before us, and will make arrangements to follow your suggestion at an early period.

**M. E. L.**—Scrofulous diseases are believed by most authorities to be transmitted hereditarily. The constitutional predisposition is developed by cold and damp and insufficient nourishment. We are not aware that any theory has been promulgated as to why it should manifest itself about the neck so frequently with young children.

**Prinsep.**—The Posological Table in Guy's Hospital Pharmacopoeia gives the relative doses of remedies according to age. It assumes that the maximum dose can be borne between the ages of 21 and 45, while for younger and older subjects a graduated scale is printed. If by "the Examinations" you mean the Pharmaceutical Examinations, we must advise you to write to the Secretary, 17, Bloomsbury-square, London, who on application will send you a synopsis of the subjects, to which is added a list of books recommended for study.

**Inquirer.**—The London chemists close at all hours, but generally late. In large establishments, however, it is frequently arranged that some assistants go off duty early on several evenings in the week.—There are quite as good, and in some large towns, better opportunities provided for study than in London—Bloomsbury-square excepted. Besides, the particular institution of which you might wish to avail yourself, might be a couple of hours' journey from your situation.—There are frequently situations offered where time for study is allowed; but of course this is a matter of arrangement, and is usually considered in the salary.

**A Subscriber.**—We hardly profess to be authorities on the points of dogs, but we are informed that the book which you refer to is a standard work on the subject. It is published by Van Voorst.

**Hydroxyl.**—The silver sulphate might be employed as you suggest; but as an excess of it would be necessary, silver and sulphuric acid should afterwards be separated from the solution, so nothing would be gained. There is nothing like trying the experiment.

**CARBOLISED ATMOSPHERE.**—In Dundee Hospital we are informed they use Calvert's No. 5 carbolic acid in open iron vessels, which is warmed on a stove, and thereby the vapour is diffused and disinfects the whole ward.

**Congener.**—**OTTO DE ROSE COLD CREAM.**—There is no preparation of fancy pharmacy which so well rewards the patient operator as this one; but it can never be a respectable production unless the utmost care is given to it. First it should be remembered that the fresher the article is the better, therefore it should only be made in quantities likely to last a short time. A month is the utmost time that cold cream should be kept. The best formula is the following;—

Spermaceti, 5 oz.  
White wax, 2½ oz.  
Oil of almonds, 1 lb.  
Rose-water, 6 oz.

Melt the wax and spermaceti in the oil with gentle heat, transfer the whole to a mortar previously warmed and capable of holding at least four times the quantity. Commence to stir with a pestle of hard wood, using a bone spatula, and never cease stirring nor change the direction until the manipulation is complete. In a short time commence to add the rose-water slightly warmed, and then stir more briskly. When the creamy consistence is obtained add 20 drops of otto de rose, but the ointment should be quite cool before this is added. The cream should be covered and set aside for a night; and if any watery globules are observed on stirring, let them be pressed out by means of further stirring.

**F. Wheeler (Guildford).**—**GLYCERINE JELLY.**—Sometimes glycerine jelly is made as above, a part of the rose-water being substituted by glycerine. This preparation is often tinted pink by using a little concentrated rose oil. We also add several other formulæ for glycerine jelly:—

1. Take pure glycerine and add powdered tragacanth to thicken, and perfume.

2. Transparent soap, 1 oz.  
Water, 4 oz.  
Inodorous glycerine, 24 oz.  
(All by weight.)

Dissolve the soap in the water by heat, adding an equal weight of glycerine. When dissolved, add the remaining portion of glycerine, and sufficient water to make up the weight. When nearly cool, add any suitable perfume, and pour in glass jars. It has a very pale amber colour, is transparent, melts easily on the skin, and leaves no residue.

3. Starch, 10 parts.

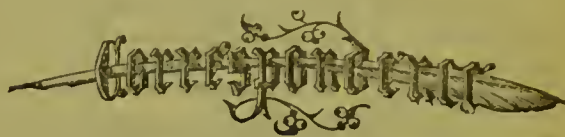
Water, 5 parts.

rub together, and add

Glycerine, 60 parts.

Warm until a smooth ointment is produced. Perfume according to fancy.

**Chemists.**—The stone bottles are made at the Lambeth Potteries Doulton & Co., Cliff, &c. The tin boxes may be obtained from Austin & Co., 258, Bradford-street, Birmingham.



## CHECKING THE BALANCE SHEET.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—It may savour of presumption to oppose the judgment of my single opinion against the majestic verdict of an editorial "we," but I cannot allow your leader of January 15, headed "Taking Stock," to pass without challenging those portions that are launched against certain views upon pharmaceutical education I have lately ventured to make public.

I am emboldened to do so by the thought that perhaps the article I refer to may not have been the work of "all the talents" that constitute the staff of the CHEMIST AND DRUGGIST, but the production of a single hand, with whose particular method and cunning pharmaceutical readers are already somewhat familiar. Should my guess be correct, I rejoice that the subject is enlisting the attention of one who is seldom content merely to touch the surface of any topic of real pharmaceutical importance, and who is so likely ultimately to assist in removing the difficulties that surround the one we are now discussing. For the present, however, I hope he will forgive my saying that I do not think he has written quite wisely; and I somewhat more than regret that the CHEMIST AND DRUGGIST, an organ, as we are wont to consider, of great usefulness in the cause of pharmaceutical progress, should be made to meet a suggestion for a more extended system of pharmaceutical education by describing it as an attempt to "fritter the money of the Pharmaceutical Society over the provinces" at the cost of consigning 17, Bloomsbury-square to "dust and charwomen."

It is strange it did not occur to this writer that in adopting the burlesque he was handling a rather dangerous weapon. If one cared to accept his challenge, sport might possibly be made of the facts he himself reveals—for instance, that from 1845 to 1863 the educational expenditure of the Society was concentrated (certainly not "frittered") upon a number of students that never in any year reached thirty-nine! One might be tempted, in the same spirit, to ask him to pursue his statistical investigations a little more deeply, and to turn, let us say, to the accounts of the Society for the year 1853, where he will find the sum received for lecture fees amounted to the enormous figure of £7, representing an attendance of students not very difficult to calculate, for whose instruction the professors (well the Society don't "pauperize" its professors) are stated to have received £400.

I say one might answer burlesque with facts that look almost as funny. But this is not the way in which such matters should be discussed: reforms are seldom effected by satire or by recrimination, but by the advocacy of something better, and I respectfully submit that on this ground my suggestion is entitled to sober consideration.

To one who can assert that the principle of action which at present guides the Pharmaceutical Society in its educational efforts is "the only one possible in this generation," and who can see no farther into the needs of pharmacutists than to fancy they can be met by a process of "first filling Bloomsbury-square, and then starting another college (?) in the north, &c.," my project may seem wild, but most of your readers will be aware that it is by no means a novel one. Numbers of provincials are familiar with the scheme as worked under their own eyes by the Science and Art Department of Committee of Council on Education, though



possibly Londoners are not so well informed upon such matters. It will not, I am persuaded, appear either wild or funny to them, and I even venture to think the more our humorous friend examines the matter, the less ridiculous it will appear to him.

It must not be forgotten that my suggestion in no way attempts to interfere with the existing pass examinations of the Pharmaceutical Society. It is only with its educational efforts that I have ventured to grapple; and when the lively author of your editorial is compelled to admit that the largest number of students the Society's walls have ever yet received during a ten months' session is 113, and is constrained to regret that of these the largest portion "stay only long enough to pass the minor," it is surely not too soon to discuss some plan whereby its resources should be more widely and wisely distributed. No wonder with such facts before his eyes he was driven in the next line to sigh over the many evidences that existed of that worst of all delusions—"cramming," but it was a wonder he did not discover in the very suggestion he was attempting to ridicule the best possible antidote to this tendency.

If the "science and art" system is characterized by one peculiarity more than another, it is by the securities it takes against this danger. No candidate can earn a single shilling of the disposable funds unless he can be certified to have attended a full number of the lectures of a systematic and recognised course. Moreover, no candidate can earn a shilling for work done in the advanced stage of a subject unless he has passed in its preliminary stage.

It may, perhaps, be impossible for the Society by any direct action to prevent cramming for the pass examinations; as your writer emphatically puts it,—“a candidate for the examinations may obtain his education at a Cliftonian College or the New Cut”—but the Society can at least withhold its help to any system that permits cramming in its own educational arrangement, and yet what can that be called which admits a student to its laboratories for “just as long as will enable him to pass the minor.” What advertising “coach” does other than this? I am not accusing the Society of “coaching,” I am only drawing a very palpable deduction from your writer's own words.

The question before us, Sir, reduced to the smallest number of words, is this—Is the present system adopted by the Pharmaceutical Society for promoting the scientific education of pharmacists the best that can be devised? I am of opinion that the results do not justify any such conclusion, and that it behoves all who take any interest in the progress of our body to search for a better. I should be very sorry to think that any scheme suggested or supported by myself involved the closing of the laboratories and lecture-rooms at 17, Bloomsbury-square and the “pauperizing of its professors,” but such anticipations appear to me totally unjustifiable and unwarranted by the facts of the case. Were there any glimmer of probability that such a result would follow its adoption, it would afford an irresistible argument for an immediate change; if they are not wanted, why maintain them? But I have too much faith in the potential vigour of the men at the heads of these departments, as well as in the necessity of such schools for the needs of London pharmacists, to imagine that the pecuniary interests of any one of them would be even temporarily prejudiced by the change I suggest.

I have the honour to be, Sir,

Your obedient servant,

Clifton, January 29, 1872.

G. F. SCHACHT.

### THE PHARMACEUTICAL EXAMINATIONS.

TO THE EDITOR OF “THE CHEMIST AND DRUGGIST.”

SIR,—Allow me to correct some misrepresentations which occurred in your editorial note with reference to my lecture on pharmaceutical examinations. You say that I would eliminate from the examinations the recognition of pharmaceutical products, and that I attribute the failures of many of the best men to their nervousness. If you will kindly refer to the report of my lecture you will find that I said just the reverse. I distinctly stated and endeavoured to prove that our young men should be able to recognise all the chemicals used in pharmacy by means of tests; and

that they should be in a position, not only to recognise the roots, leaves, seeds, resins, etc., by their appearance, but also to distinguish between different qualities of those articles. I only spoke against the recognition of extracts and tinctures, because the former, or at least three-fourths of them, cannot be recognised with any degree of certainty, and because the latter can only be distinguished by the sense of smell, of which a candidate may be temporarily deprived by a cold. With regard to the second point above alluded to, the exact words I used were: “I do not believe that many of the failures alluded to can be attributed to nervousness.” According to your representation, I wish to propose an astounding scheme, because I find that many imperfectly-educated men are remorselessly referred back. What I actually said and complained of was, that well educated and thoroughly qualified men are often rejected. I certainly spoke in favour of the omission of botany and practical dispensing, and supported my views with arguments which I challenged my opponents to disprove. As you do not touch my arguments, but appear to be satisfied with sneering at my views, I have, of course, no desire to discuss these points. Neither do I intend to find fault with the knowledge of human nature, which you display in stating that by rejecting a good man again and again his nervousness is likely to be conquered. But I certainly have a right to expect that an editor should make himself acquainted with the details of a lecture before he undertakes to criticise it.

I am, Sir, yours respectfully,  
225, Oxford-street, Manchester.

L. SIEBOLD.

February 10th, 1872.

TO THE EDITOR OF “THE CHEMIST AND DRUGGIST.”

SIR,—Your correspondent (Mr. R. G. Jones) is mistaken in saying that at “a recent preliminary examination two Latin prescriptions were submitted to the candidates.” One of the questions was taken from the Pharmacopœia, 1851, the other was a direction copied from a prescription in Pereira's “Selectæ & Præscriptis;” and as the reason for setting those questions appears to be misunderstood, it may be perhaps well to state that many of the candidates who present themselves for examination have already been apprenticed some years, some of them being twenty years of age or more, with whom Cæsar has become unfamiliar, or who possibly have never made the acquaintance of that illustrious Roman, and therefore these questions are set to give those young men a better chance of passing, it being thought that pharmaceutical Latin being more familiar to them, they might have less difficulty with it than with Cæsar.

No injustice whatever is done to the junior candidates by this proceeding, as four questions are set each time, viz., two from Cæsar and two of the technical ones, and the juniors are neither required nor expected to answer the latter. No candidate is required to answer more than two of these questions, and he is at liberty to choose which two he pleases, so that I don't see how anything could have been devised less unfair, or more in the interests of the candidates.

W. WILKINSON.

Cheetham Hill, Feb. 3.

THE LONG FIRM—GLASGOW BRANCH.

TO THE EDITOR OF “THE CHEMIST AND DRUGGIST.”

SIR,—On the 16th of November last we received from Glasgow an order for a single packet of a proprietary medicine; these words were added, “Stamps will be sent on receipt.”

The article was forwarded by first post, but the money has not yet reached us. It now strikes us forcibly that our correspondent finds it more profitable to carry on trade by promises than by payments, and it will be well if he has selected us only as his victims.

The amount would be covered by a very few postage stamps, so that it is to be apprehended that pence and principle are equally scarce with him.

Yours, etc.,

FARDON AND SON.

Maidstone, Feb. 9, 1872.



## Dentistry.

## JAPANESE DENTISTRY.

BY W. ST. GEORGE ELLIOTT, M.D., D.D.S., YOKOHAMA, JAPAN.

(Extracted from the *Dental Cosmos*.)

THE Japanese have not good teeth, neither can they be said to be very bad. Caries, with its resulting odontalgia, is quite common; but the most frequent cause of trouble is the accumulation of tartar. To such an extent is this true that it constitutes the extracting agent of the aged. It is, indeed, rare to find an elderly person with teeth.

With the exception of fish, the Japanese are chiefly vegetarians; their principal food consisting of rice, beans, sweet potatoes, etc. Since foreigners have resided here, the natives have shown a disposition to add meat to their diet. In the streets of the capital, Tokio, there are numerous stands, kept by wayside merchants, who supply the passer-by with this new foreign notion,—beef-stew.

It is one of the peculiarities of this peculiar land that among the females one seldom meets with beauty, either among the very young or the aged; in both cases they are entirely devoid of colour, but in early womanhood it is not rare, nor is colour wanting to lend its charm. The teeth of the musmies, or daughters of Japan, are objects of envy, but the horrible custom of blacking the teeth after marriage destroys what little beauty time had not yet stolen.

The natives are a phlegmatic race, and do not feel pain as those of sanguine temperament; not that they bear it better. Considerable care is taken to have the teeth appear white, the native brush consisting of tough wood, pounded at one end to loosen the fibres, when it resembles a paint-brush; it is used with several kinds of powder, red, ash-colour, white: they are all of coarse structure, but answer the purpose very well with the soft, wooden brush employed. Owing to its shape, it is impossible to get the brush behind the teeth.

In mechanical dentistry they rank far above any barbarian or semi-civilised nation. In point of fact, I believe they stand alone. Their denture answers admirably one principal object—namely, the mastication of food. This, however, applies only to full sets. All full upper cases are retained *in situ* by atmospheric pressure. This principle is coeval with the art. The oldest inhabitant does not know when the principle was introduced.

Owing to the fact that dentistry exists only as a mechanical trade, the status of those who practise it is not high. In a country where class distinctions are so marked, and where the laws prescribe the dress and social position of all, it is graded with carpenters, which fact is shown by their word, *hadyikfsan* (tooth carpenter). Dentistry, to some extent, is practised as an itinerant business. The carver, taking his seat beside the highway, exhibits his gilded sign, specimens, and material. When not engaged in the all-important business of gossiping, he plies his chisel, shapes a denture, or grinds on a slab a bit of quartz for a tooth. I have said that dentistry does not give social position; neither does it give wealth. In full practice a dentist may get two or three cases in a month, and, for some, he may receive as high as five dollars; but that is a price far above the ability of the majority to pay; from one to two dollars being the usual rate.

The base, I am inclined to think, is always of wood. On the cheaper sorts, the teeth are merely outlined upon the base, but generally they consist of ivory, shark's teeth, or stone, let into the wood, and retained in position by being strung on a thread, which is secured at each end by a peg driven into the hole where it makes its exit from the base.

Iron or copper tacks are driven into the ridge to serve for masticating purposes, the unequal wear of the wood and metal keeping up the desired roughness of surface.

To construct a full upper and lower denture requires about two days' constant work. Generally, however, four or five are taken, as there must be time allowed for the usual smokes and occasional naps which are considered so necessary. The ordinary service of a denture is about five years, but they frequently last much longer. The writer has one in his possession that has been in use fifteen years, and is still quite serviceable.

The process of manufacture is crude in the extreme.

A piece of wax, large enough to cover the roof of the mouth, is heated, introduced, and pushed up in position by the thumbs; it is then removed, and placed in cold water to harden. Another piece of wax, large enough to make the model, is then heated and applied to the impression, pressed into every part by the fingers, then chilled by placing in cold water, and separated. A piece of wood is now roughly cut to the desired form, and the model, having been smeared over with a red paint (*veni*), is applied to the plate; where they touch each other is marked by the paint. This is then cut away, and the process repeated until the plate coats uniformly; it is then tried in the mouth, and any necessary corrections made. They do not seem to be very particular to get a smooth surface, at times not removing the tool marks.

As the teeth are not natural in appearance, and don't add to the beauty of the wearer, they are never used for purely ornamental purposes. I will except, however, those partial dentures which are fastened to the adjoining teeth by a piece of thread, they being used only for appearance sake.

Having heard the statement made by foreigners that these sets of teeth were frequently inherited from one generation to another, I have made inquiries among the trade, but failed to substantiate it, although from the mode of manufacture there is no reason why one denture might not be made to answer several persons in succession.

## ON AMALGAMS.

BY THOMAS FLETCHER, ESQ., F.C.S., WARRINGTON.

(Abstracted from the *British Journal of Dental Science*.)

COMMENTING on an article which had appeared in a Canadian dentists' journal, the writer remarks that the proper method to make an amalgam of silver and tin is to take the metals, chemically pure, in atomic proportions: silver 108, tin 118; melt them in a crucible at as low a temperature as possible to prevent evaporation of the tin, and the surface must be covered with coarsely powdered charcoal. Before pouring, stir the metal with a stick, and pour into a clean mould immediately. Clean the surface of the ingot and reduce it to filings as quickly as possible with a revolving cutter, pass a strong magnet through the filings a few times to recover any steel accidentally removed from the cutter, and put it immediately in air-tight bottles. Of these filings take 24 grains and mix 7 grains of mercury with them; the result will be a powder, adhesive under pressure, which will not dissolve in alcohol and therefore needs no washing, and which will weld up as solid as a coin.

This is a true amalgam, containing no free mercury—in fact, there is great difficulty in separating a trace of mercury below a red heat. If the filings are much exposed to the air they oxidise and do not work well, but washing is totally unnecessary unless an excess of mercury is used, which oxidises rapidly when combined with a small quantity of any other metal.

In reference to pure amalgams, Mr. Fletcher writes:—"I find from experiment that 5 grains of mercury are sufficient to make 24 grains of tin into a plastic mass, which will set hard, although very slowly. The mistake is often made of adding an enormous excess of mercury and trying to squeeze it out again, a process visibly impossible, as any amalgam made in this manner will contain sufficient free mercury to combine with its own weight of filings, if not more. I have used platinum amalgam frequently; and from the result of a series of experiments extending over several years and not yet complete, I believe that the amalgam of the future will contain neither silver nor gold, but that the choice lies between platinum, tellurium, and nickel, or compounds of these. The addition of platinum to ordinary amalgams gives them the property of hardening with extreme rapidity without shrinkage, but they are troublesome to make, as the proportion of each metal requires to be very exact, a state of things seriously interfered with by the platinum unless very great care is taken, from its curious property of combining with tin at a red heat, with an evolution of heat so intense as to drive off a large portion of tin instantly, and occasionally to project the whole mass out of the crucible with an explosion, or to split the crucible from sudden expansion. A shower of melted metal at an



intense white heat is by no means a pleasure, as I can state from experience.

Palladium has a similar property when melted with tin, but it does not appear to afford a protecting influence over other metals, as platinum does. Nickel does not form an amalgam direct, and is in every respect a most difficult metal to experiment with. Tellurium is at present 80s. per ounce, which would be rather an objection to an amalgam, but I believe this metalloid alone or in combination is the best yet found, if the price were anything like reasonable. It is as tough and white as tin, not acted on by sulphur or moderately strong acids; in fact, it has every property of sulphur, including its extremely bad conducting power, with the advantage of being a hard metal forming an amalgam with mercury.

One important fact with regard to amalgams is that if the surface is carefully polished it will retain its colour even if made of a compound which would go quite black when left unpolished.

The addition of platinum enables this to be done at one operation, as a well-made filling can be filed and polished in a few minutes, and I have seen old fillings of platinum, tin and silver, retaining a brilliant surface without tarnish for years when they have been well polished.

### MEDICAL ELECTRICITY.

THE *Medical Press and Circular* reports a *soirée* given by Mr. J. L. Pulvermacher on the evening of February 3rd. There was a goodly number present, and the short lecture which was given by Mr. Pulvermacher, who traced the development of the science of electricity from its infancy to the present time, was listened to with great interest. This gentleman, although a German by birth, delivered himself in excellent English, and his explanations of the various phenomena produced by this agent, and the illustrations and experiments which were given in a lucid and scientific style, prove him to be a thorough master of his subject. With one thing we were particularly pleased, viz., an utter absence of self. There was scarcely an instrument, either English or foreign, that was not either shown or mentioned, with a proper acknowledgment of the merits of each; in fact his own inventions, which are so well known to the profession, and deserve to be more extensively used, were touched upon only incidentally, and with modesty. In these days of charlatanism and quackery it is refreshing to observe this feature: an inventor who merges personality in an invention which, in the hands of medical men, is capable of so much good, and whose highest aim is to receive a similar acknowledgment at the hands of the profession of this country to that which has already been accorded to him by the Academy of Sciences and the heads of the profession in France, deserves the recognition he solicits. Indeed the medical literature of France upon the subject seems not to be considered perfect without illustrations and descriptions of his inventions, and we are glad to see also a tendency on the part of writers in this country—men whose names are a guarantee—such as Drs. Russell Reynolds, Handfield Jones, Powell, etc., to acknowledge the merits of such inventions, and to suggest their more general adoption. From the great success which has attended the treatment of cases which have been brought under our immediate notice, together with the extreme portability and simplicity of the machines, we feel perfectly justified in endorsing the views expressed by these gentlemen, and wish the inventor the success he undoubtedly merits.

### Trade Memoranda.

THE office of THE CHEMIST AND DRUGGIST will be closed on the 27th inst., the day appointed as a Thanksgiving Day. It will be noticed that, in our advertisement pages, Messrs. Maw, Son, and Thompson make a similar announcement.

The new catalogue issued by Messrs. Dixon, Dean, and Co., combines, with an excellent list of druggists' sundries, a useful diary and almanack. It bears traces of careful preparation, and is bound in attractive cloth covers.

The partnership hitherto subsisting between Edward Hyde, Harry Rawson, George S. Woolley, and Hermann Woolley, wholesale and retail chemists and druggists, Market-street, Manchester, trading under the style or firm of James Woolley, has been dissolved.

Messrs. Colman, the English manufacturers of mustard, have stirred up a hornet's nest in the United States. Their agents in New York brought an action against one Crump, described as "the principal manufacturer of labels bearing the bull's head trade-mark," and the *American Grocer*, which is our authority, tells us that "pending the decision the prosecutors bought in the United States no less than 800 cans of mustard bearing the bull's head trade-mark, but not being of their own manufacture. Our informant assumes that the object is to secure a handsome sum in damages. At the trial, Mr. Charles Stickney, a large mustard manufacturer in the United States, testified that he had used a bull's head as a trade-mark for the past thirty-three years—thirteen years before Messrs. Colman had come into the market with theirs, and we notice that no less than sixteen other firms claim to have used the same trade-mark in advance of Colman's. The plaintiffs, however, have secured a verdict, but the trade is combining to have a new trial in a higher court.

PHÉROL BOBŒUF.—In our columns this very popular French speciality is introduced to the British trade. The *Phénol Bobœuf* is a standard article in all French pharmacies, and has gained the *Prix Montyon*, a distinction not easy to obtain.

Messrs. Lynch and Co. have submitted their new catalogue to us for inspection. Most of the articles in the list have numbers appended, and in ordering, these only need be quoted, detailed description being thus obviated. This arrangement will be found convenient.

Messrs. C. and J. J. Midgley, chemists, have purchased the business carried on for many years by Mr. T. H. Taylor, at 2, St. Ann's-square, Manchester. Mr. C. Midgley has previously had the management of the dispensing branch at the establishment of Messrs. Jewsbury and Brown.

We learn from the *Australasian* of December 2, that Messrs. M'Master, Hodgson, and Co., of Dublin, were awarded a certificate of merit, extra class U., by the National Agricultural Society of Victoria, for specimens of their fluid extract of annatto, which were exhibited at the Spring Show, in November last. This is the highest award given to articles not in the prize list which are classed as extras.

CHLORAL HYDRATE DRAGÉES.—Monsieur Limousin, of Paris, whose pharmaceutical specialities we have had occasion to notice on previous occasions, has been interrupted in his scientific pursuits for some considerable time, but we are glad to notice that he now resumes them. During the siege of Paris, M. Limousin was among the defenders of that city, like many other of the pharmaciens, who preferred outpost duty to service in the hospitals. M. Limousin is a well-known manufacturer of chloral hydrate, and he adduces excellent reasons for the presentation of this medicine in the popular French sweetmeat style. Dragées are very popular in France for the administration of medicines, but they are not known enough in England. For the administration of a medicine like chloral hydrate they offer especial advantages, and English chemists who will introduce them may rely on the carefulness bestowed upon their preparation in this instance. We notice that Messrs. Sanger are the London agents. The dragées are in glass bottles, in order that they may be impervious to climate and damp weather.

With respect to the sale of spirits, etc., by chemists, Mr. Leeman, M.P. for York, stated before a deputation of publicans and hotel keepers that he would not interfere with druggists or grocers selling spirits as at present. He favoured a tribunal of magistrates or ratepayers to decide upon the withdrawal and granting of licences, those withdrawn, except under disgraceful circumstances, to carry with them compensation for withdrawal.



A grocer was fined £5 and costs, at the Brierley Hill Police-court, on Dec. 12, for giving one ounce short weight in selling some sugar. The scales were correct, but the deficiency arose from the fact that paper was weighed with the sugar.

The following facts are interesting. They are obtained from a supplementary return, published by the Inland Revenue Commissioners. The amount charged with income and property tax in the financial year 1869-70, in the United Kingdom, was—Schedule A (in respect of the property in lands and tenements), £134,703,602; schedule B (in respect of the occupation of lands and tenements), £37,301,083; schedule C (annuities and dividends payable out of public revenue), £35,700,480; schedule D (profits from trades, professions, etc.), £166,352,052; schedule E (stipends or pensions of public officers, payable out of public revenue), £24,514,245. Total, £398,228,871.

## GAZETTE.

### PARTNERSHIPS DISSOLVED.

BISHOP, HENRY, and CLEVELAND SMITH, Tonbridge, Kent, surgeons.  
BLAKELEY, SAMUEL, JOHN OLDROYD, and FREDERICK WILLIAM BLAKELEY, Wakefield, Yorkshire, soap manufacturers.  
BUTTEN, JOHN HENRY, and CHARLES OOLE ROOERS, Burford-road, Stratford Bridge, Essex, oil manufacturers.  
NICHOLSON, SAMUEL, and EDWARD STRATON MORRIS, Crown-yard, Stanhope-street, Hampstead-road, wholesale druggists.  
PEASEGOOD and Co., Kingston-upon-Hull, drysalters.  
SELVEY, JOHN, and WILLIAM HENRY HORTON, Temple-street, Birmingham, surgeon-dentists.  
SHARP, RICHARD, and GEORGE LAMB, Kingston-upon-Hull, surgeons.  
WHITTLE, WILLIAM, and JONATHAN BOWMAN, Hatcham-road, Old Kent-road, Surrey, aerated water manufacturers.  
WOOD, E., and J. BEDFORD, Leeds, manufacturing chemists.  
YARROW and ADKIN, or YARROW, ADKIN, and Co., Wilson-street, Finsbury, wholesale druggists' sundriesmen.  
YATES, DAVID, and RICHARD HEYWORTH, Grime-street, Bolton, Lancashire, drysalters.

### DECLARATION OF DIVIDEND.

LANE and STEPHENS, Manchester, oil merchants, first div. of Id., any Tuesday, at Mr. McNeill's, 27, Oxford-chambers, Manchester.

### BANKRUPT.

COLLINGS, JAMES, Ashton-under-Lyne, Lancashire, apothecary, Feb. 16, Ashton-under-Lyne.

### BANKRUPTCY ANNULLED.

CARLISLE, JOSEPH, Carlisle, Cumberland, druggist.



A GENTLEMAN in Melbourne recently recovered £100 from the proprietor of the Russell-street Turkish Baths for having received injury by the turning on upon his head, of a stream of scalding water. Considerable injury to the soft tissues and partial exfoliation of bone were stated to have resulted from the "accident."

At the second annual meeting of the Homœopathic Dispensary in Melbourne, held on October 30th last year, it was announced that the institution had been subsidised by Government to the extent of £150.

An inquest—ultimately adjourned—was recently held at Stroud on the body of Mr. Henry Hogg, chemist and druggist, who was found dead in his house under singular circumstances. There was nothing apparently the matter with him on Saturday, and he went to bed early. On the following morning, the servant-girl discovered him partly dressed lying dead on the floor of the sitting-room. Near him was a cup and a jug, containing, as far as it is at present known, simply water. The inquiry was adjourned for the purpose of a post-mortem examination being made on the body of the unfortunate gentleman.

Mr. Bedford held an inquest on January 19, at the Charing Cross Hospital, on the death of Mr. Samuel Cleaver, aged sixty-four years. Deceased was the head of the firm of Cleaver and Sons, soap manufacturers, Red Lion-street, Holborn. He resided at the Oaks, Burgess-hill, Merton, Surrey. On Wednesday he fell dead in a carriage at Charing Cross Station, from the effects of disease of the heart. A verdict of "Natural death" was returned.

At the Bristol County Court, the case of William Dale, chemist and druggist, of Regent-street, Weston-super-Mare, recently came before the Registrar. Mr. Dix appeared for the trustee of the estate, and said that, as there was a question arising as to sweeping away the whole of the debtor's estate by a bill of sale into the merits of which he desired to make inquiry, he applied for an adjournment of the hearing. The Registrar granted the application, and adjourned the case until the 16th of February.

In the Western States of America a peculiar disease has occurred among the cattle—they become totally blind. In Kansas city alone there are said to be two hundred blind cows.

The will of William Derner Saddington, formerly of 63, Wood-street, manufacturer of sieves, druggists' sundries, twines and matting, was proved on the 29th ult. under £14,000 personalty, the executors being his relict, and his brother Samuel Saddington, of Arundel-square, Barnsbury. The will is dated February 19, 1866, and the testator died at his residence, Dacre Park, Lee, Kent, December 3, last, aged 63. He has bequeathed to the Metropolitan Dispensary and Charitable Fund, Fore-street, London Missionary Society, and the London City Missions, each £100. He has left several legacies to his brothers, sisters, and nephews; appointing his wife residuary legatee.—*City Press*.

Dr. Lankester, on January 20th, held an inquest at 37, Montagu-square, on the body of the Hon. G. C. Vernon, the Recorder of Lincoln and second son of Lord Lyveden. For some time past deceased had complained of pains in his head, and was in the habit of using "neuraline," a patent medicine to soothe the pains. On Monday, the 15th inst., he went out for a walk with his wife and on his return was seized with a fit. Drs. Watton, Comberbach, and Williams, were sent for, and attended him in the drawing room. They determined that he was suffering from neuralgia and epileptic fits. Mr. Arthur Wynn Williams, deposed that he was called on Monday last, and found the deceased lying in bed. His features were perfectly placid. He had been in the habit of using "neuraline," the application of which was harmless unless the skin was broken. Mr. George Harley, M.D., M.R.C.S., formerly physician to the University College Hospital, stated that he had made an analysis of the contents of the bottle marked "neuraline." It was an extract of monkshood—called by botanists "aconite," the active poison of which is "aconitine"—mixed with rose-water, and containing chloroform; one drop and a-half of Fleming's tincture being sufficient to destroy life. Dr. Watton stated that he declined to give a certificate of death owing to its suddenness. The coroner remarked that owing to communications he had received, he had determined, notwithstanding the deceased was attended by four medical men, to hold the inquiry. He had read letters from Lord Rokeby and others, and there was no doubt that the deceased had expired from natural causes. In deference to the feelings of the friends, he held the inquiry at the residence of the deceased. There was no doubt he was seized with a fit of convulsions, from the effects of which he expired. The jury returned a verdict of "Death from natural causes."

OBITUARY.—Died at his residence, 75, Southgate-road, James John Hickisson, the beloved and affectionate son of James and Margaret Anne Hickisson. Buried at Highgate Cemetery, January 18, 1872.

### THE SUPPLY OF DRUGS TO WORKHOUSES.

At a late meeting of the Islington Board of Guardians, the chairman, on the dispensary order list being submitted for signature, protested against the quantity of drugs ordered by the medical officers, and also the peculiar articles ordered. The guardians present expressed their opinions upon the matter to the effect that it was time to stop the practice of the medical officers ordering drugs which were not in the parish pharmacopœia; and on the suggestion of Mr. Hillman, it was resolved to call the attention of Dr. Bridges to the subject. The articles chiefly objected to by the chairman were an item of eight pints of paregoric, two lbs. of laudanum, some honey, and a quantity of lavender water. This is not the first occasion when the chairman has assumed this belligerent attitude with respect to drugs.



## HARD UPON THE ALKALI MANUFACTURERS.

At the monthly meeting of the St. Helen's Town Council, held on the 7th ult., Mr. Greenough proposed that the alkali manufacturers of the borough defray all the expenses incurred by the Corporation since the Act was obtained in reference to Sankey Brook pollution, which had been occasioned by themselves; and that the Town Clerk be instructed to take counsel's opinion as to the best mode of recovering these expenses from the alkali manufacturers. Mr. Beasley said the resolution would be inoperative if passed, and while agreeing with the object in view, recommended the withdrawal of the proposal. He argued in favour of the alkali manufacturers defraying the cost of abating the nuisances arising from their works, as a gentleman connected with the trade had informed him, that if trade continued good, the alkali manufacturers would net £250,000 in St. Helen's alone during the year. Mr. Greenough refused to withdraw his motion, but it was defeated by the members making a general exit from the room. At the same meeting of the council a memorial was read from numerous inhabitants of the borough, complaining of the proposed establishment of alkali works in Boundary-lane, and asking the council to prevent it, or to impose restrictions upon its power of injuring vegetation. The matter was referred to the improvement committee.

## LAW AND POLICE.

## EXTRAORDINARY VITALITY.

At the Court of Queen's Bench, on February 2nd, Dr. Williams, of Aberystwith, brought an action against the Cambrian Railway Company, for £174 5s. 3d. for medical advice etc. The defendants had paid £90 into court and disputed their liability as to the remainder. Mr. Lopes, Q.C., and Mr. Charles appeared for the plaintiff; Mr. H. James, Q.C., and Mr. Turner for the company. The plaintiff was a medical man residing at Aberystwith, and on the 2nd November, 1869, he was called upon to attend professionally a gentleman named Dashwood, who had received serious injuries in a collision on the defendants' line at a place called Carno. The plaintiff's case was that his charge was at the agreed sum of ten guineas per week, Mr. Dashwood having been removed to Llanysillea, with Miss Dashwood, who was slightly injured in the same accident, about four and a-half miles from Aberystwith. Mr. Dashwood's injuries were such as to require almost daily attention for seventeen weeks, nine weeks of which time he was confined to his bed. The charge included attendance on Miss Dashwood and another passenger, who was also injured. In cross-examination by Mr. H. James, plaintiff stated that at the request of the company, he sent in a bill of particulars. In it he had charged at the rate of 755 doses of medicine, 73 lotions and outward applications, and 100 pills and powders, supplied to Mr. Dashwood; and at the rate of 222 doses, nine powders, and forty-four lotions for Miss Dashwood, in seven weeks. In reply to the learned counsel witness stated that the patient was still alive. This was the first time he had attended a patient under contract. His charge for visits and medicines in Aberystwith, varied from 5s. to 7s. 6d. per visit. He sent in the bill to show what really had been done, and not for the purpose of charging. He knew he gave all the medicine, and the charges were fair and reasonable. Mr. Payton Dashwood said he negotiated the settlement of the compensation for his brother, Mr. Arthur Dashwood, who was the person injured. The amount of compensation received from the Company was £375. Mr. Elwes (the traffic manager) then told him that the medical attendances came to £120 or £130, which he urged was the reason why the company should pay less compensation, but he (witness) said he considered it as a reason why the compensation should be greater, as showing the serious character of the injury. Mr. Elwes said he should have to get plaintiff to take less than ten guineas per week. The injury turned out more serious than was expected. The family were highly satisfied with what the plaintiff had done for his brother. By arrangement with Mr. Elwes, plaintiff was to attend his brother until he was able to travel to London. Two or three medical men in the neighbourhood gave evidence for the defence, alleging excessive charges by Dr. Williams, and the jury ultimately returned a verdict for the plaintiff for £10 in excess of the amount paid into court.

## THE PHARMACY ACT.

Mr. John Davies, a registered chemist and druggist, of Wrexham, was summoned before the local bench on January 14th, for selling poison without the name of the seller being on the box, wrapper, or bottle, as required by the Pharmacy Act. Mr. Edisbury, as local secretary of the Pharmaceutical Society, laid the information. There were two charges against the defendant; the first being that he had sold red precipitate without attaching his name and address to the wrapper; and the second that he had sold syrup of poppies without the word "poison," or his name and address affixed to the bottle. In both instances an errand boy of Mr. Edisbury's was the purchaser. In each case he had rendered himself liable to a penalty not exceeding £5. The second case was not pressed, and it was stated that Mr. Edisbury had no feeling or *animus* in bringing forward the case. He did it as the representative of the Society, and felt it a painful position to be placed in. Mr. Davies said it was very unusual for him to sell things in that way. He had no intention in that case to conceal his name in any way whatever. Many people did not know the strength of some poisons, but that was only a pennyworth, just enough for a child. He had been thirty years in that business, and had never killed anybody. (Laughter.)—A Magistrate: So far as you know, Mr. Davies.—Mr. Davies: Not to my knowledge. This is the first occasion that I have ever been before a coroner or justice. He was not aware that he was bound to have his name in the way stated.—The Clerk said that the Act was very stringent on that point.—The magistrates then retired to consult over the case, and on returning to court they imposed a fine of 20s. and costs on the defendant.

## BRUTAL ASSAULT BY A CHEMIST IN NOTTINGHAM.

At the Nottingham Police-court, on February 2, Mr. William Hobson Wallis, chemist and druggist, Goosegate, Nottingham, was charged with assaulting his servant, Elizabeth Farnsworth, by beating her with a poker. Complainant said that on the day in question, hearing cries for help proceed from defendant's sitting-room, she went thither, and found defendant abusing his wife. She interfered on her behalf, and defendant immediately seized the poker and commenced to attack her in a most brutal manner, inflicting a wound on the head, from which the blood flowed copiously.—Dr. Taylor, who had examined the girl, said she suffered very much from a contused and lacerated wound on the upper part of the head, reaching through the scalp bone. There were also bruises on other parts of her body.—Defendant was ordered to pay £5, and also bound over in sureties to the amount of £100 to keep the peace.

## DARING ROBBERY FROM A SHOP.

At the Coventry Petty Sessions, on the 10th ult., James Winters was charged before the Mayor with stealing from the shop of Mr. G. F. Bamptou, chemist and druggist, £3 11s. 6d. The prosecutor had received the money from a customer on the 8th inst. He placed the amount on a desk at the end of the counter near the shop window. Anyone standing in the shop could look over the barricade round the desk, and see the money on it; and it could also be seen from the street through the shop window. Prosecutor left the shop to go into the back room, and was away about five minutes, and on returning to the shop he saw the prisoner run round the counter and leave the shop. Prosecutor immediately followed in pursuit of the prisoner, and never lost sight of him until he gave information to a police constable, who ultimately apprehended him in a draper's shop, where he had purchased a pair of stockings, giving a shilling in payment. When apprehended, the police officer found upon the prisoner the pair of stockings purchased, £3 10s. in gold, and some small change. Prisoner was committed to the sessions.

## LIVERPOOL CHEMISTS' ASSOCIATION.

The fifth general meeting was held at the Royal Institution on the 7th inst.; the President, Mr. E. DAVIES, F.C.S., in the chair.

Mr. J. Simpson, 10, Rumford-place, was elected a member of the Association.



Donation of the current numbers of the *Pharmaceutical Journal* was announced.

The PRESIDENT read a circular he had received from Dr. Attfield, asking for aid in replacing the loss sustained from fire by the Chicago Pharmaceutical College. The President said he had been named one of the committee formed to promote this object, and he should be glad to receive contributions of money, books, or objects for the museum.

Mr. SAMUELS showed a new and simple contrivance to note hygrometrical changes in the atmosphere, called "the Chameleon Barometer."

Mr. FRASER then read a letter entitled "Notes on Practical Pharmacy," in which he mentioned his experience in testing for morphia and opium; and in speaking of the value of the B.P. test said, that although when worked carefully it would give true results, yet it was just possible that, with hurried work, a part of the morphia would be separated along with the colouring matter, thus giving the percentage too low. In any case the morphia is brownish from the presence of colouring matter. For the purpose of checking this test, he used the method known as 'Staples', in which the morphia is precipitated from an aqueous solution, to which alcohol has been added, by ammoniacal spirit; this gives almost colourless crystals. These two processes, carried on simultaneously, he considered to be sufficient for all practical purposes. Mr. Fraser next treated on the advisability of having a hard and fast standard for the quantity of morphia which shall exist in the official opium preparations. Lastly, he advocated the question whether we ought to standardize other drugs according to the percentage of the alkaloid or active principle; and he expressed an opinion that these, from a medical point of view, will be more satisfactory remedial agents than either the system now in use or the substitution of alkaloids. In conclusion, the new process for preserving and seasoning wood by means of boiling in a solution of borax was briefly noticed.

A discussion followed, in which the President, Mr. Tanner, Dr. Symes, and Mr. Fraser took part.

A vote of thanks to Mr. Fraser for his paper was then passed.

The sixth general meeting was held at the Royal Institution, on the 18th of January; the President, Mr. E. DAVIES, F.C.S., in the chair.

Mr. N. P. Williams was elected a member of the Association.

The following donations were announced:—"The Year-Book of Pharmacy;" current numbers of the *Pharmaceutical Journal* and the *CHEMIST AND DRUGGIST*; *New York Druggists' Circular* for December; and a number of copies of "Hints to Apprentices and Students" for distribution among the associates.

Mr. A. H. MASON, F.C.S., exhibited a specimen of Crotonic Chloral-hydrate, described its formation, its probable therapeutic value, and gave preliminary notice of the results of some experiments in connection with its use in pharmacy.

Mr. A. NORMAN TATE read a paper on "Chemistry and Commerce." The object of this paper was to point out that, although such great benefits had already been derived by commerce from chemistry and other sciences, yet that to most persons engaged in commerce scientific knowledge is something almost unknown. Most of the various articles that pass through the hands of merchants, brokers, and others are scarcely ever examined scientifically, and are often sold and bought without their real practical working value being in any way assessed except by eye or touch, or sometimes by smell or taste. Yet the value of many articles cannot possibly be assessed in this way. Instances were given referring to pharmacy, such as the purchase of Peruvian bark, opium and articles of a like character, the real value of which cannot possibly be ascertained without a proper assay of the amounts of active constituents. The same could be said of dyo-woods, weeds, etc., and of tanning materials and many other articles. In addition to further individual study of chemistry and other sciences bearing upon their business, the reader of the paper considered that much good might be done by trade associations establishing agents or correspondents in different parts of the world, whose duty it should be to search out and forward new materials likely to be useful, and that these articles might then be carefully examined, and their value

practically ascertained. The Pharmaceutical Society might, for example, do something in this way, in order to discover and bring into use new materials useful in pharmacy.

An animated discussion on some of the topics alluded to in the paper followed, in which the President and Messrs. Redford, Mason, Shaw, and the Secretary took part; and Mr. Tate replied to the several remarks made.

Mr. REDFORD referred to the subject of ships' medicine chests, upon which the *Pharmaceutical Journal* had published an article in last week's issue. He thought that, as far as the Liverpool emigration traffic was concerned, there was efficient protection against adulteration. Every emigrant ship leaving the port with fifty passengers had a medicine chest, which was inspected and sealed up by a medical officer before being put on board. Two such medical inspectors were attached to the Emigration Department, one of whom was also analytical chemist to the Board of Trade. Mr. Redford believed that medicine chests for merchant ships were not so inspected.

The meeting terminated with a vote of thanks to Mr. Tate for his interesting paper.

#### LEICESTER.

THE half-yearly meeting of the Leicester Assistants' and Apprentices' Association was held in that town on the 1st inst. The report of the committee showed that the financial position of the Society had improved, and that the membership-roll had increased about 30 per cent. The benefits to members resulting from the educational arrangements were enforced in the report, and a suggestion thrown out to employers that the adoption of the early closing movement would prove a boon to the Association. A fresh committee was elected, with Mr. Bradley as president.

#### SHEFFIELD PHARMACEUTICAL AND CHEMICAL ASSOCIATION.

THE annual meeting of this Association was held in the Music-hall, on January 17. The Council, in their annual statement, regretted to report unfavourably upon the past year's educational operations, there having been a great falling off in the attendance at the Latin and Chemistry classes, the reading-room, the library, and also a marked lukewarmness on the part of the apprentices to avail themselves of the various advantages afforded them. On the other hand, the Council had pleasure in stating that the Association had rendered useful services in connection with the withdrawal of the "Amended Pharmacy Act" by Government. The Council earnestly urged upon the members and associates carefully to consider the present position and future prospects of the Association, pointing out that the income had been insufficient to meet the current expenses. The total deficit on the year's transactions was £17 4s. 11d. After discussing the report, the following gentlemen were elected officers for the ensuing year:—Mr. V. Radley, president; Messrs. Cocking and Horncastle, vice-presidents; J. Preston, honorary secretary; Mr. J. H. Dunnill, assistant secretary, with seven members of Council. The treasurer and auditors of the past year were re-elected. The meeting separated at a late hour.

#### ANNUAL DINNER.

The annual dinner was held on Wednesday night, Jan. 31, at the Adelphi Hotel, when a large number of chemists and friends were present. After the cloth was withdrawn, the newly-appointed President, Mr. W. V. Radley, proposed "The Queen" and other loyal toasts. Mr. Birks gave the toast of the evening, "Success to the Sheffield Pharmaceutical and Chemical Association." In the course of his remarks he said that the use of such an association was to provide instruction for the apprentices and associates. He reminded them that if their study was to be real, they must apply themselves to it with constant diligence. He was sorry to see that the report and financial statement were not so promising as it might have been expected, yet the report was thoroughly candid and straightforward, and the matter only required the consideration of the rest of the chemists of this neighbourhood to induce them to join in the good work that was being carried out. Mr. Dobb responded, and



alluded to the benefits of the association. He said, that if it ceased to be an educating body, still it would always, as the representative body of the chemists of this most important town, make itself felt, as it had during the past session, in the House of Commons in regard to the proposed "Pharmacy Amendment Act." Mr. Ward then proposed the "Medical Profession." Dr. Hime responded. The several other toasts of the evening were "The Honorary Members and Lecturers," to which Mr. A. H. Allen replied. "The President," by Mr. G. A. Cubley; "The Council and Officers of the Association," by Mr. Appleton, and responded to by Mr. Hudson; "The ex-Secretary," by Mr. Appleton. The toasts were enlivened by several songs and recitations, and the meeting broke up at a late hour.

## Pharmacy.

At the meeting of the Royal Society of Victoria on the 13th inst., Mr. Bosisto, secretary to the Pharmaceutical Society, read a communication on the cultivation of the *Mentha piperita*. Experiments he had made showed that the plant was easy of culture, and would grow freely in the district of Gipps Land, which appeared its proper *habitat*. The essential oil distilled from some of the plants had been pronounced by competent judges in England, as equal in many respects to the best English production, and commanded as high a price as 25s. per lb. This was an industry which Mr. Bosisto thought would well pay the slight attention it required, and prove as profitable as the culture of the poppy, which he also recommended should receive more consideration than it had yet obtained by those interested in the culture of the soil.

A communication has been forwarded to one of the daily journals, stating that *Beche de Mer*, found so abundantly on the reefs and islands to the north of Australia, may possibly be used as a substitute for cod-liver oil, or even in reference to it. Analysis has, it is stated, shown it to contain a very large proportion of iodine.

## Scientific Fragments.

WE learn that Mr. Crookes has accepted the scientific direction of the A B C Sewage Company.

Professor Huxley has withdrawn to Egypt on account of his health.

### THE NEW NOMENCLATURE.

A first prize of 1,875 francs, and a second of 750 francs are offered at Gottingen for a new and exact determination of the atomic weights of the elements, together with the indication of the limits of error, accompanied by a review of the works of the various authors who have written on the subject. The prizes will be decided upon the 11th of March, 1873.—*American Chemist*.

Meerschman is likely to be cheaper, as large quantities have recently been found in Patagonia.

From a recent report of the Inspector of Police to the Bengal Government it would seem that the use of ammonia in snake bites has been found really effectual. Out of 939 cases in which it was freely administered 702 victims had recovered.

### FIRST USE OF A MINERAL MEDICINE.

Legend has it that this was the oxide of iron. Melampus, who lived about two centuries before the fall of Troy, holding an augury to discover a cure for impotence, was directed to seek for a certain knife which had lain for a long time in a tree, where it had been stuck after it was used for sacrifice. The rust scraped off this, and given to his patient for ten days in wine, was warranted by a sapient old vulturo to effect a cure.—*British Medical Journal*.

At the Linnæan Society, on December 7th, Mr. Daniel Hanbury, exhibited a shoot of the olive (*Olea Europea*) bearing fruit, which had been produced in the open air (against a south wall) in his garden at Clapham.

## Exchange Column.

A GENTLEMAN who frequently uses this Exchange Column writes thus:—

"My last advertisement in Exchange Column answered well. I could have sold the . . . in nearly a dozen different places."

REVISED TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the publisher of the CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to "The Publisher of the CHEMIST AND DRUGGIST, Colonial Buildings, Cannon-street, London, E.C.," the envelope to be endorsed also with the number. The publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

### FOR DISPOSAL.

Nitrous Oxide Gas Apparatus, complete. 57/480.

"Cæsar," complete. 17/480.

Surgical Books, Reading Lamps, Seales, Camera, Electrical Machine, Sundries. Carrington, Chemist, Wincanton.

Erichsen's Surgery, in first-class condition—1853 edition. 40/480.

Printing Press, all iron, with four Cases, Type, Ink, Roller, &c. Job lot, cheap. 45s. Wyles, Chemist, Bourn.

10,000 Fly Papers, 8s. per 1,000, cash; or would barter 1 gross of Dog Soap, 26s. 29/480.

Fire-proof Safe, 20 by 16 by 14, 3/; or exchanged, with cash, for a larger size. 34/480.

Chemists' fittings, Glass Cases, Bottles, etc. Apply by letter, Mr. Hills, No. 2, Etloe Terrace, Carlisle-road, Leyton.

Southall's Materia Medica Collection, Pharmaceutical Journal, July to December, 1871. 21/480.

Lamp, equal to new. Cost £6, will take £4. For description, address, Edwards, Chemist, Clapton.

Gold Paint.—1½ dozen 1/; 1 ditto 2/; ¼ ditto 3/6. Cash offers wanted. C. Wheeler, Redditch.

Homœopathic Case for Window or Counter. Hayland, Chemist, York.

Soda Water Machine for sale (Hayward Tyler and Co.'s No. 5). Has been in use one season only, and is equal to new. Offers wanted. 30/480.

Materia Medica Collection, 5s. Year Book of Pharmacy. 1870 2s. 6d. Lescher's Pharmacy, 5s. 6d. G. Loewe, King-street, Norwich.

Cash offer for a 14-inch Plate Electrical Machine, with Leyden Jar, Insulating Stool, Discharging Tongs, and six pieces of Apparatus. Sidney Payne, Wallingford.

Amateur Printing (Roller) Press, with Ink and Ink Roller and Chase, suitable for Bills or Labels. Price 25/ W.C., Post-office, Woburn, Beds.

Wanted an offer for 500 dozen (or less) Loofers, or Vegetable Indian Flesh Rubbers. Apply to G. Downan, Chemist, Southampton.

The "Pharmaceutical Journal," from 1844 to 1850, bound; also, from July, 1850, to June, 1870 (nearly complete), unbound. C. J. Hambly, Sydney-terrace, Taunton.

A bargain, Two Pulvermacher's Volta-Electric Belts, nearly new, in perfect condition, separate or together. Loten Brothers, Chemists, Hornsea.

Case of Dental Stoppers, two scalers, first-class; also four improved forceps and patent key, quite new, £2 12s. The lot a bargain. Hughes, 151, Hoxton-street, N.

Amateur Printing Press. Size 9 by 7, with Chase, Type, Ink, Roller, Slab, Type Case, Quoins, Reglet, Furniture. Carriage paid, 21s. Wyles, Stamp Office, Bourn.

Dows and Co.'s Generator Agitating Rack and Connecting Pipe, suitable for filling cylinders for draught apparatus. Cost 28/ 10s. To an immediate purchaser 14/ 5s. will be taken. 33/480.



- Owen's Receipts. A "rated Mineral Waters, Continental Liqueurs, Fruit Syrups, Bitters, British Cordials, Wines, Sauces, etc. Post-free, 1s. 3d. 8, Owen's-buildings, Paul-street, Finsbury.
- "Pharmaceutical Journal," Vols. I. to V.; White Marble Mortar, extreme outside diameter, 22 inches, inside 14 inches; Black Marble ditto, 16 and 10 inches: Bell Metal ditto, weight 66 lbs. Fidler, Newbury.
- Iron Mortar and Pestle, capacity 20 pints deep; price 14s. Curley's Comaline, 16s and 32s doz., cash or barter; also entire fittings of a small Druggist's shop. List on application. J. Floyd, Bury St. Edmunds.
- A Photographic Glasshouse, 30 ft. by 12 ft., nearly new; could be taken to pieces. Price 25l.—cost 60l. Also a 9 hy 7 Camera and Lens, Stand, Baths, C. de V. Rolling Press, &c., all in good condition. Wynter, Chemist, Seaford, Sussex.
- Lot of Chemical Apparatus, etc., suitable for beginners. List and terms on application. Fresenius' "Qualitative Analysis," 6s. Miller's "Inorganic Chemistry," 14s. Taylor, on "Poisons," 8s. Homo, 9, South-st., Searboro'.
- Owen's "Compendium," Receipts and Processes, Pharmacy, Chemistry, Confectionery, Perfumery, Cosmetics, Homœopathy, Essences, Wines, latest Discoveries and Improvements. New impression, 26 stamps. Invaluable. Owen, Chemist, Leytonstone and Stratford.
- Cash offer for Gregory's "Organic Chemistry, 1856;" Stockhardt's "Experimental Chemistry, 1852;" "Eton Latin Grammar;" Arnold's Henry's "First Latin Book;" "The Laboratory or School of Arts, 1799;" "Pharmaceutical Journal," 1860, 61, 62, and 63, four numbers missing. Sidney Payne, Wallingford.
- Microscope, first-class Lever Stage, Three Powers, two Eyepieces, beautifully finished, all the latest improvements, price £5 5s.; ditto Binocular, £6 6s.: large Binocular, with Polariscope, splendidly finished, £10 10s. Great bargains, all new. Hughes, Chemist, 151, Hoxton-street, N.
- Boxwood Egg-shaped Pessaries; Three Double Trusses; Bentley's "Botany," Simons' "Chemistry," two vols.; Taylor's "Medical Jurisprudence;" Alkaline Permanganates, by Muter; Gregory's "Medicine;" Richardson's Spray Producer; Lyell's "Antiquity of Man;" "Medical Directories," 1866-1870; "Pharmaceutical Journal," 1859-1860. Cash or Exchange. George Parker, Horsley Woodhouse, Derby.

## WANTED.

- Bentley's "Botany." 22/480.
- Sallust's "Catiline." 18/480.
- Bentley's "Botany," Second Edition. Bond, Fore-street, Tiverton.
- Edwards's Nitrous Oxide Gas Apparatus. State price and condition. 15/480.
- Bent Plate Glass Counter Case, 6 or 8 feet long. Ward Shaw, Ch-mist, Hull.
- A Mixing Machine, suitable for Baking Powder. Apply W. H. Williams, Chemist, Hayle, Cornwall.
- Stohrer's Battery. Geo. Parker, Horsley Woodhouse, Derby.
- Royle's "Materia Medica," Mohr's "Pharmacy," "Celsus," "Pharmaceutical Latin Grammar." Latest Editions. 16,480.
- Barber's Pocket Edition of the "Pharmacopœias;" also, a Modern Elementary Work on Chemistry. Address, Volens, 2, Montpellier Exchange, Cheltenham.

## Varia.

A Delaware correspondent of the *Scientific American*, proposes to anchor balloons, and let the world turn under them, by which means he expects to sit still and yet travel a thousand miles an hour. He does not state what his anchors to, but we suppose it is what Archimedes sighed for when he stated he could move the world if he had a proper fulcrum.

## COMMON SENSE AND CIVIL SERVANTS.

Pay public officers living salaries, then shut off all perquisites. The boy who told the merchant that "salary is no object, I can pick up enough around," didn't get a situation.

## THE PURSUIT OF STRENGTH.

Those unfortunates who devote their lives to the pursuit of strength, according to *Hall's Journal of Health*, who rise at unearthly hours, and shiver under ice cold showers baths, who never eat as much as they wish or what they wish, who live as mechanically as possible, and conscientiously deprive themselves of about all reasonable enjoyment, are certainly to be pitied. Still their terrible system leaves them alone during the night. If they eat, drink, move, and have their being under its supervision through the day, at night they can sleep undisturbed. But a new school has arisen in California. Some cracked-brained enthusiast has announced that he has prolonged his life for years by sleeping with his finger tips touching his toes. The reason of the advantage of this proceeding is not at first evident, but is easily understood when we read that "the vital electrical currents are thus kept in even circumflow, instead of being thrown off at the extremities and wasted." The discoverer has given the valuable secret gratuitously to the world, actuated solely by a desire to benefit suffering humanity. "Machines, warranted to hold the body easily in this position, can be obtained only of," etc., etc. If the method comes into general use, our posterity will, we fear, be a "stiff-backed generation."—*Chicago Tribune*.



THE affirmation by the French Assembly of President Thiers' fiscal programme is significant, and furnishes another instance of the power of individual will in directing the policy of a great nation. Were not the principles of free trade proved thoroughly sound, we might begin to fear that its position might be weakened by the force of example. As it is, our commercial interests are founded on such a reliable basis, that we can afford to regard, if not with satisfaction, at least with comparative indifference, the retrograde movement of our old ally. Official information of the abrogation of the treaty may be shortly expected. That England is in a position to retaliate with force is certain, but such is not her policy. It is questionable, however, if it was judicious of our Government to satisfy France on this point. M. Thiers adroitly turned our candour to his own advantage, and was careful to impress upon the Assembly that they would not suffer reprisals. Such a consideration would naturally have some weight, and doubtless caught many wavering votes. Looking at the proposed increase in the tariffs in a restricted and individual light, it is satisfactory to find that chemical products remain in *statu quo*. Their exemption from the proposed increase of entry duty to 10 per cent. *ad valorem*, was announced by M. Delsol (the reporter of the committee), on the 2nd ult. It is estimated that this tax alone would have brought 320,000l. into the French exchequer, and it is certain that the imposition would have exercised a most prejudicial effect on our chemical trade.

We subjoin a few facts which are interesting, as showing the gigantic scale on which commercial and financial operations are carried on in our favoured isle. The imports of 1871 exceeded 1870 by £34,260,813, and 1869 by £49,013,769. The exports of 1871 exceeded 1870 by £34,573,230, and 1869 by £46,748,267. The grand total of imports for 1871, £364,974,974; of exports, £253,079,742, being an excess of imports over exports of £111,895,232. The imports of 1871 averaged, therefore, nearly a million sterling a day.

The cheques and bills paid through the London Bankers' Clearing House in 1871, amounted to 4,826 millions, sterling; which is £911,814,000; or, more than 23 per cent. in excess of 1870. There has been uninterrupted progress since 1868, the first complete year these statistics were issued.

The total "Settlements" on the Stock Exchange, 1871, were 806 millions sterling; being about 27 per cent. more than 1870.

In chemicals the exports of 1871 were £608,765 in excess of 1870.

At the drug sales on the 25th of January, Mr. Lewis, of Lewis and Peat, was about to submit a parcel of Cundurango



to auction, when a discussion arose as to whether the bark ought to bear allowance of tret. One well-known operator complained that Messrs. Jenkin and Phillips had knocked down a quantity of the article in question to his bid at a previous sale, and had refused the customary allowance of 4 lbs. in 104 lbs. A rather lively discussion ensued, and Mr. Horner, of the well-known firm in Bucklersbury, energetically declaimed against such allowances *in toto*, characterising them as the "foolish regulations of bygone days." Eventually, the selling broker declared that the cundurango "up" would be subject to tret. Later on Messrs. Jenkin and Phillips had two bales of the sensational bark to offer, and the question of tret was reopened. In spite of some protests, the bark was put up, "bid or no bid," without tret allowance, and was bought in. It seems probable that the almost general condemnation at the sales of allowances will precipitate their abolishment. Such a consummation seems desirable, as we fail to see the utility of an allowance which is quite arbitrary, and regulated only by custom. Although this allowance for imaginary damage is still made on a few drug imports, it seems needless to confuse prices by burdening new products with it. Obsolete regulations are not in accordance with the spirit of the age, and should be swept away when no better *raison d'être* can be adduced in their favour than old usage.

The trade of the last month has been brisk and extensive; most staple articles have been in good demand, and several have advanced appreciably.

Cardamoms we predicted would recover from their depression; and the result has justified our impression. Firmer prices are now established, and at auction on the 8th, of 27 packages Malabar, 21 sold at improved prices—fine clipped, 8s. 9d. to 8s. 10d.; very good, 8s. 7d. to 8s. 8d.; good fair, 8s. 1d.; middling, 7s. 3d. to 7s. 4d. 36 packages Malabar were put up, and 25 were taken at an advance.

BARKS.—Cinchonas, although brought forward in good supplies, maintain their value.

Cundurango continues to be pressed on the market. On the 26th ult. of 6 cases 2 only were knocked down at 3s., showing a considerable decrease in value; and at last sales 13 serons commanded no purchasers, and were withdrawn. 100 packages of canella alba went off at 15s. to 16s. 6d., the demand having improved.

Roots.—Rhubarb has shown more activity, and prices have improved. Sales of 53 cases out of 163 put forward have been effected. Good fair, 2s. 4d. to 2s. 9d.; good middling, 1s. 7d.; rough, 8d. Gentian is lower, and offers more advantage to buyers.

SENKA rather easier, but still scarce.

Musk has been the subject of more inquiry, and is enhanced in value. Fifty-three caddies sold on the 8th, fair shaped, with some rather bulby pods at 38s. 6d. to 39s.; fair to good even shaped at 42s. to 43s. Six tins Nepaul green sold at prices advancing from 58s. up to 61s. 6d.

The public sales of cochineal on the 31st of last month were entirely confined to Teneriffe, of which 1,692 bags were offered, 686 being silver and the remainder black. The auctions went off with considerable depression, and sales could only be effected at a decline of  $\frac{1}{4}$ d. to 1d. per lb. On the 17th ult. an unusually heavy supply was brought forward amounting to 2,674 bags. Holders showed a willingness to sell, and with a fair demand throughout, a large portion was disposed of, viz., 1,717 bags. Prices were above the previous sales, ordinary Teneriffe silver selling at  $\frac{1}{4}$ d. per lb. advance.

ALOES continue in good request, and Cape have moved up considerably in connection with a strong demand.

ESSENTIAL OILS.—Aniseed exhibits signs of giving way, and holders will probably accept lower rates shortly. Cassia is also somewhat flatter. Citronelle since we last reported has been the medium of very extensive business. On the 20th of last month 16 cases sold at 2 $\frac{3}{4}$ d., on the 25th 100 cases were taken at 2 $\frac{3}{4}$ d. to 3d., and a few days afterwards the price was 3 $\frac{1}{4}$ d.

This remunerative figure seems to have stimulated holders to "let go," and on the 8th inst. 163 cases were put forward, but fell somewhat flat, 12 cases only selling at 2 $\frac{3}{4}$ d. Lemon-grass has likewise advanced considerably; 230 cases were sold by private contract on the 20th ult. at 3d. per oz., and three days afterwards there were buyers at 4d., sellers refusing to go on at the price. 25 casks were bought in at last

sales at 4 $\frac{1}{4}$ d. per oz., and this is the present value. Lemon and Bergamot maintain their position, and stocks remain at a low ebb. We hear that the crop of mint in America last year was below the average, and as the celebrated "Hotchkiss brand" oil has been much reduced in stocks there, an advance in price at no very distant date seems probable.

GUINEA GRAINS have again moved upwards, and are worth more than double their price this time last year.

SPICES.—Pimento, after having been in good demand and saleable at higher rates, is again flatter, and of 436 bags recently offered only a few found buyers. Black pepper is firmer, and white procurable at former quotations. Nutmegs of fine quality have been somewhat plentiful, and a slight reduction has resulted, but small or shipping sorts have maintained their value. Mace in good supply, and medium kinds easier. Cinnamon: Our advices from Ceylon report the demand for this spice to be very active. The new cuttings are finding their way in, but at no reduction in value, and as the cultivation on the island is not increasing, the future prospects for producers seem good.

CHEMICALS.—Trade has been generally brisk throughout the month, and the prospects forward are most encouraging. The shipments of alkali during January were 311,976 cwt., against 191,039 cwt. for corresponding month of last year. Soda crystals and ash have experienced a good demand. Bicarbonate has likewise been in request, and is appreciably dearer, good shipments having been made to America. Bleaching powder is now worth 14s. 6d., and moves off freely at that price. Sulphate of ammonia slightly easier, but still well looked after. The Italian Government is encouraging the cultivation of the beet-root for sugar-making purposes, and this most efficient artificial manure will doubtless be called into requisition. Citric and tartaric acids are dearer, and the former is now worth 3s. 5d., with no immediate prospect of reduction, as it is anticipated that the supply of lemon juice will fall short. Iodine maintains its position, and there is every prospect of a further advance. Potassium iodide is now worth 35s., and as it is a very generally used remedy, its enormous price is beginning to be felt by consumers. It has been suggested that the coasts of Jersey and Guernsey would yield the supplies of kelp which are not forthcoming from the western coasts of Ireland and Scotland. Further, it is asserted that the sea-wrack from the proposed source is eminently rich in iodine. The suggestion is a valuable one, and might, if carried into effect, prove a successful speculation.

DRYSALTERIES: Terra Japonica.—The imports of Gambier for the past month have reached 1,200 tons. Deliveries 1,500 tons, stock 1,700 tons. There has been a large business done for arrival as well as "ex ship," and at a considerable advance in prices. Rates have varied from 20s. 6d. to 21s. for arrival, and 21s. to 21s. 6d. ex ship, and at 20s. 6d. to 22s. "ex warehouse." The quantity afloat for England and the Continent is unusually small, being only 3,330 tons against 7,625 tons this time last year. Cutch, owing to a speculative demand, in spite of a large stock, has advanced. Deliveries of the month 417 tons; stock, 3,490 tons. Shellac is firmly upheld at extreme prices, and both turmeric and galls are firmer.

OILS.—Castor has been in great request, and the market has been eased of large supplies, at an advance. The Olive crop of the Mediterranean countries has been much injured by excessive drouth. Should the French crop also prove a failure the market will be seriously affected at no remote date. At present the demand does not exhibit much activity, Galipoli, £52 to £53; Spanish, £51 to £51 10s.; Levant £50; and Mogador, £48 10s. to £49. The market in Palm is quiet, and some small sales of Crude Sperm have been recently made at £96. The imports of Turpentine into London during January comprised 4,808 barrels from Wilmington and 174 casks spirits from Bordeaux. The market, as we write, is again higher, 51s. to 51s. 6d. being now the value of American and 54s. French. For delivery during the summer months 46s. 6d. could be obtained. Petroleum has not changed much, but spirit is lower. We note that M. Sella, in his late financial statement to the Italian Chamber, intimated his intention of increasing the duty on petroleum, both crude and refined, the former by 100 and the latter by 300 per cent. This tax will probably lead to diminished consumption. The quantity imported into Italy heretofore has been about 5,000,000 gallons.



## Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining-lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.]

HEMICALS.		1872.		1871.	
ACIDS—		s. d.	s. d.	s. d.	s. d.
Acetic .....	per lb.	0 4½	to 0 0½	0 4	to 0 0
Citric .....	per lb.	3 5	.. 0 0	2 9	.. 0 0
Hydrochlor. ....	per cwt	4 0	.. 7 0	4 0	.. 7 0
Nitric .....	per lb.	0 5	.. 0 5½	0 5	.. 0 5½
Oxalic .....	"	1 1½	.. 0 0	0 8	.. 0 0
Sulphuric .....	"	0 0½	.. 0 1	0 0½	.. 0 1
Tartaric crystal ..	"	1 3½	.. 0 0	1 4	.. 0 0
powdered .....	"	1 8½	.. 0 0	1 4	.. 1 4½
ANTIMONY ore.....	per ton	240 0	.. 0 0	240 0	.. 280 0
crude .....	per cwt	36 0	.. 0 0	38 0	.. 38 0
regulus.....	"	54 0	.. 0 0	49 0	.. 0 0
star .....	"	50 0	.. 0 0	51 0	.. 0 0
ARSENIC, lump.....	"	13 0	.. 14 0	15 6	.. 16 0
powder.....	"	6 9	.. 7 3	6 9	.. 7 3
BRIMSTONE, rough ..	per ton	145 0	.. 150 0	160 0	.. 0 0
roll .....	per cwt	10 0	.. 10 6	11 0	.. 0 0
flour.....	"	12 0	.. 12 6	12 0	.. 13 0
IODINE, dry .....	per oz.	2 3	.. 2 4	0 10½	.. 0 10½
IVORY BLACK, dry.....	per cwt.	3 6	.. 0 0	0 0	.. 0 0
MAGNESIA, calcined.....	per lb.	1 2	.. 1 3	1 2	.. 0 0
MERCURY.....	per bottle	200 0	.. 0 0	240 0	.. 0 0
MINIUM, red .....	per cwt.	21 3	.. 21 6	20 9	.. 21 0
orange .....	"	31 6	.. 32 0	31 6	.. 0 0
PRECIPITATE, red .....	per lb.	3 4½	.. 0 0	3 9	.. 0 0
white .....	"	3 3½	.. 0 0	3 8	.. 0 0
RUSSIAN BLUE .....	"	0 0	.. 0 0	0 0	.. 0 0
SALTS—					
Alum .....	per ton	160 0	.. 165 0	140 0	.. 0 0
powder .....	"	180 0	.. 0 0	150 0	.. 160 0
Ammonia:					
Carbonate .....	per lb.	0 7	.. 0 7½	0 5½	.. 0 6
Hydrochlorate, crude,					
white.....	per ton	560 0	.. 600 0	460 0	.. 560 0
British (see Sal Ammoniac)					
Sulphate .....	per ton	450 0	.. 480 0	330 0	.. 340 0
Argol, Cape .....	per cwt	70 0	.. 93 6	57 0	.. 71 0
France .....	"	0 0	.. 0 0	0 0	.. 0 0
Oporto, red .....	"	24 0	.. 28 0	22 0	.. 24 0
Sicily .....	"	62 0	.. 65 0	0 0	.. 0 0
Naples, white .....	"	62 0	.. 65 0	0 0	.. 0 0
Florence, white .....	"	0 0	.. 0 0	0 0	.. 0 0
red .....	"	0 0	.. 0 0	0 0	.. 0 0
Ashes (see Potash and Soda)					
Bleaching powd.....	per cwt.	14 6	.. 0 0	11 6	.. 0 0
Borax, crude .....	"	60 0	.. 80 0	42 6	.. 60 0
(Tincal) .....	"	47 0	.. 65 0	45 0	.. 60 0
British refnd. ....	"	100 0	.. 0 0	68 0	.. 70 0
Calomel .....	per lb.	3 2½	.. 0 0	3 7	.. 0 0
Copper:					
Sulphate .....	per cwt.	29 6	.. 33 0	23 0	.. 25 0
Copperas, green .....	per ton	66 0	.. 65 0	50 0	.. 60 0
CorrosiveSublimate ..	p.lb.	2 7½	.. 0 0	2 11	.. 0 0
Cr. Tartar, French, p. cwt.		107 6	.. 110 0	83 0	.. 90 0
Venetian grey .....	"	110 0	.. 110 0	90 0	.. 96 0
brown .....	"	0 0	.. 0 0	0 0	.. 0 0
Epsom Salts .....	per cwt.	5 6	.. 6 0	6 0	.. 7 0
Glauber Salts .....	"	4 6	.. 6 0	4 6	.. 6 0
Lime:					
Acetate, white, per cwt.		13 6	.. 23 6	12 6	.. 23 0
Magnesia: Carbonate ..	"	42 6	.. 45 0	42 6	.. 0 0
Potash:					
Bichromate .....	per lb.	0 8	..	0 5	.. 0 5½
Carbonate:					
Potashes, Canada, 1st					
sort .....	per cwt.	45 6	.. 46 0	32 9	.. 0 0
Pearlshashes, Canada, 1st					
sort .....	per cwt.	49 0	.. 49 6	40 0	.. 0 0
Chlorate .....	per lb.	1 5½	.. 1 6	0 11	.. 0 0
Prussiate .....	per lb.	1 9½	.. 0 0	1 0	.. 0 0
red .....	"	3 2	.. 3 3	1 9½	.. 1 10
Tartrate (see Argol and Cream of Tartar)					
Potassium:					
Chloride .....	per cwt.	11 0	.. 0 0	13 0	.. 0 0
Iodide .....	per lb.	35 0	.. 0 0	14 6	.. 15 0
Quinine:					
Sulphate, British, in					
bottles .....	per oz.	7 9	.. 0 0	8 0	.. 0 0
Sulphate, French .....	"	7 6	.. 0 0	8 0	.. 0 0
Acetos .....	per lb.	1 4	.. 0 0	0 10	.. 0 0
Sal Ammoniac, Brit. cwt.		47 0	.. 48 0	41 0	.. 42 6
Saltpetre:					
Bengal, 6 per cent or					
under .....	per cwt.	30 6	.. 31 0	29 6	.. 30 0
Bengal, over .....	per cent.				
per cwt.		23 6	.. 30 0	29 0	.. 29 6
Madras .....	"	0 0	.. 0 0	0 0	.. 0 0
Bomb. & Kurrachee p.ct.		0 0	.. 0 0	0 0	.. 0 0
European .....	"	0 0	.. 0 0	0 0	.. 0 0
British, refined .....	"	34 0	.. 35 0	32 0	.. 32 6
Soda: Bicarbonate, p.cwt.		15 0	.. 15 6	10 9	.. 11 0
Carbonate:					
Soda Ash.....	perdeg.	0 2½	.. 0 2½	0 1½	.. 0 2
Soda Crystals per ton		130 0	.. 0 0	85 0	.. 87 6
Hyposulphite.....	per cwt.	16 0	.. 16 6	13 0	.. 0 0

SODA:		1872.		1871.	
		s. d.	s. d.	s. d.	s. d.
Nitrate .....	per cwt.	16 9	to 17 0	16 0	to 16 6
SUGAR OF LEAD, White, cwt.		43 0	.. 45 0	39 0	.. 40 0
Brown .....	"	31 0	.. 0 0	26 0	.. 23 0
SULPHUR (see Brimstone)					
VERDIORIS .....	per b.	1 1	.. 1 3	1 0	.. 1 2
VERMILION, English.....	per lb.	2 4	.. 3 6	4 2	.. 4 4
China.....	"	3 6	.. 0 0	3 6	.. 0 0
DRUGS.					
ALGÆ, Hepatic.....	per cwt.	75 0	.. 230 0	70 0	.. 210 0
Sootrine .....	"	130 0	.. 300 0	120 0	.. 315 0
Cape, good.....	"	42 0	.. 47 0	24 0	.. 27 0
Inferior .....	"	30 0	.. 40 0	17 0	.. 23 0
Barbadoes .....	"	75 0	.. 220 0	70 0	.. 200 0
AMBERGRIS, grey.....	oz.	26 0	.. 29 0	25 0	.. 28 0
BALSAM—					
Canada .....	per lb.	1 5	.. 1 6	0 10	.. 0 11
Capivi .....	"	2 0	.. 2 1	1 7	.. 1 8
Peru .....	"	9 3	.. 9 4	9 2	.. 0 0
Tolu .....	"	2 0	.. 2 1	1 11	.. 0 0
BAKES—					
Canella alba .....	per cwt.	15 0	.. 25 0	12 6	.. 20 0
Cascarilla.....	"	22 0	.. 37 0	18 0	.. 32 0
Peru, crown & grey per lb.		1 6	.. 3 1	0 10	.. 2 8
Calisaya, flat .....	"	3 2	.. 3 4	3 2	.. 3 11
quill .....	"	3 2	.. 3 4	3 2	.. 3 10
Carthagea .....	"	0 10	.. 1 9	0 10	.. 1 10
Pitayo .....	"	0 10	.. 1 9	0 10	.. 1 6
Red .....	"	1 10	.. 6 0	2 0	.. 9 0
Buho Leaves .....	"	0 4	.. 1 0	0 5	.. 0 8
CAMPHOR, China.....	per cwt.	82 6	.. 0 0	75 0	.. 76 0
Japan .....	"	85 0	.. 9 0	77 6	.. 89 0
Refin Eng. per lb.		1 4	.. 1 4	1 2	.. 1 3
CANTHARIDES .....	"	7 6	.. 7 9	5 6	.. 0 0
CHAMOMILE FLOWERS p. cwt.		45 0	.. 70 0	40 0	.. 65 0
CASTOREUM .....	per lb.	3 0	.. 30 0	3 0	.. 30 0
DRAGON'S BLOOD, Ip. p. cwt.		110 0	.. 210 0	90 0	.. 200 0
FRUITS AND SEEDS (see also Seeds and Spices)					
Anise, China Star pr cwt.		135 0	.. 140 0	110 0	.. 120 0
German, &c. ....	"	35 0	.. 50 0	36 0	.. 35 0
Beans, Tonquin .. per lb.		1 0	.. 1 8	0 9	.. 1 4
Cardamoms, Malabar					
good .....	"	8 3	.. 8 10	11 6	.. 12 3
inferior .....	"	7 3	.. 8 0	10 6	.. 11 0
Madras .....	"	2 6	.. 7 6	7 0	.. 11 0
Ceylon .....	"	3 0	.. 3 2	2 9	.. 3 0
Cassia Fistula.....	per cwt.	12 0	.. 30 0	12 0	.. 30 0
Castor Seeds .....	"	10 0	.. 12 0	10 0	.. 12 0
Cocculus Indicus .....	"	19 0	.. 0 0	12 6	.. 13 6
Colocynth, apple.....	per lb.	0 3	.. 0 6	0 4	.. 0 6
Croton Seeds .....	per cwt.	65 0	.. 70 0	89 0	.. 87 6
Cubebes .....	"	25 0	.. 27 0	22 6	.. 26 0
Cumin.....	"	55 0	.. 67 0	100 0	.. 110 0
Dividivi .....	"	12 0	.. 15 0	12 0	.. 13 0
Fennugreek.....	"	11 0	.. 21 0	15 0	.. 20 0
Guinea Grains .....	"	50 0	.. 51 6	24 0	.. 25 0
Juniper Berries .....	"	11 6	.. 12 6	15 0	.. 15 6
Myrobalans .....	"	13 6	.. 18 0	10 0	.. 15 6
Nux Vomica.....	"	10 9	.. 13 6	10 0	.. 13 0
Tamarinds, East India ..	"	2 0	.. 14 0	8 0	.. 12 0
West India, new .....	"	12 0	.. 30 0	9 0	.. 15 0
Vanilla, large .....	per lb.	40 0	.. 51 0	40 0	.. 50 0
inferior .....	"	20 0	.. 37 0	27 0	.. 37 0
Wormseed .....	per cwt.	0 0	.. 0 0	0 0	.. 0 0
GINGER, Preserved, in bond					
(duty 1d. per lb.) per lb.		0 6½	.. 0 11	0 6	.. 0 8
GUMS (see separate list)					
HONEY, Chili .....	per cwt.	50 0	.. 60 0	36 0	.. 46 0
Cuba .....	"	35 0	.. 50 0	22 0	.. 36 0
Jamaica.....	"	50 0	.. 66 0	31 0	.. 52 0
IPECACUANHA .....	per lb.	4 7	.. 4 9	5 6	.. 5 9
ISINGLASS, Brazil.....	"	2 6	.. 4 7	2 10	.. 3 7
Tongue sort .....	"	3 3	.. 5 3	3 9	.. 5 2
East India .....	"	1 5	.. 3 10	1 8	.. 4 3
West India .....	"	3 10	.. 4 0	4 1	.. 4 5
Russ. long staple .....	"	6 0	.. 9 6	5 6	.. 8 0
leaf .....	"	3 6	.. 6 6	3 0	.. 5 6
Simovia .....	"	2 0	.. 3 6	1 6	.. 2 6
JALAP, good .....	"	1 6	.. 2 6	1 8	.. 3 0
infer. & stems .....	"	0 6	.. 1 5	0 6	.. 1 6
LEMON JUICE .....	per degree	0 1	.. 0 1½	0 1	.. 0 1
LIQUORICE, Spanish per cwt.		35 0	.. 37 0	0 0	.. 0 0
Italian .....	"	40 0	.. 60 0	40 0	.. 60 0
MANNA, flaky .....	per lb.	3 3	.. 3 6	3 6	.. 4 0
small.....	"	2 0	.. 0 0	2 0	.. 2 2
MUSK.....	per oz.	20 0	.. 46 0	20 0	.. 38 0
OILS (see also separate List)					
Almond, expressed per lb.		1 3	.. 0 0	1 1	.. 0 0
Castor, 1st pale .....	"	0 5½	.. 0 5½	0 4½	.. 0 5
second .....	"	0 5	.. 0 5½	0 4½	.. 0 4½
infer. & dark .....	"	0 4½	.. 0 4½	0 4	.. 0 4½
Bombay (in casks) .....	"	0 4½	.. 0 4½	0 4	.. 0 4½
Cod Liver .....	per gall.	5 0	.. 6 0	5 0	.. 6 0
Croton.....	per oz.	0 3½	.. 0 4½	0 3½	.. 0 4½
Essential Oils:					
Almond .....	per lb.	35 0	.. 0 0	42 0	.. 0 0
Anise-seed .....	per lb.	11 6	.. 0 0	9 1½	.. 9 3
Bay .....	per cwt.	65 0	.. 70 0	65 0	.. 70 0
Bergamot .....	per lb.	8 9	.. 15 0	8 0	.. 15 0
Cajeput, (in bond) per oz.		0 1½	.. 0 3	0 2½	.. 0 3
Caraway .....	per lb.	5 6	.. 6 3	5 6	.. 6 3
Cassia .....	"	5 6	.. 5 8	4 6	.. 0 0
Cinnamon .....	per oz.	0 10	.. 3 0	1 0	.. 4 6
Cinnamen-leaf .....	"	0 2	.. 0 4½	0 2	.. 0 6



1872.				1871.				1872.				1871.			
Essential Oils, continued:—								Oils, continued:—							
	s.	d.			s.	d.			£	s.			£	s.	
Citronello.....per oz.	0	3 3/4	to 0 0	0	2 1/2	to 0 2 1/2		Con.....per tun	34	0	to 0 0	35	10	to 0 0	
fine.....	0	0	.. 0 0	0	0	.. 0 0		WHALE, South Sea, pale ..	37	0	.. 0 0	36	0	.. 27 0	
Clove.....per lb.	2	9	.. 4 0	2	5	.. 2 6		yellow ..	34	0	.. 35 0	35	0	.. 0 0	
Juniper .....	1	9	.. 2 0	1	0	.. 2 0		brown ..	32	10	.. 33 0	31	0	.. 6 0	
Lavender.....	3	6	.. 6 0	3	0	.. 4 3		East India, Fish ..	28	0	.. 0 0	28	0	.. 29 0	
Lemon.....	5	0	.. 15 0	5	0	.. 9 6		OLIVE, Galipoli .....	53	0	.. 0 0	50	0	.. 57 0	
Lemongrass.....per oz.	0	4 1/2	.. 0 0	0	2 1/2	.. 0 3		Tricete .....	52	0	.. 0 0	48	0	.. 0 0	
Neroli .....	0	5	.. 0 6	0	5	.. 0 6		Levant .....	50	0	.. 0 0	47	0	.. 0 0	
Nutmeg .....	0	4 1/2	.. 0 10	0	4	.. 0 7 1/2		Mogador .....	49	0	.. 0 0	48	0	.. 0 0	
Orange.....per lb.	7	0	.. 8 0	5	0	.. 7 0		Spanish .....	51	0	.. 51 10	48	0	.. 0 0	
Otto of Roses.....per oz.	12	0	.. 21 0	12	0	.. 20 0		Sicily .....	51	0	.. 0 0	48	10	.. 49 0	
Patchouli .....	4	0	.. 0 0	3	0	.. 0 0		COCOANUT, Cochinn. per tun	44	10	.. 0 0	40	0	.. 47 0	
Peppermint:								Ceylon ..	38	0	.. 0 0	40	0	.. 40 5	
American .....	13	6	.. 14 6	15	0	.. 16 0		Sydney ..	32	0	.. 38 0	23	0	.. 37 10	
English .....	30	0	.. 33 0	33	0	.. 34 0		GROUND NUT AND GINGELLY:							
Rosemary .....	1	9	.. 2 0	1	9	.. 2 0		Bombay .....	0	0	.. 0 0	0	0	.. 0 0	
Sassafras .....	3	0	.. 3 6	3	0	.. 0 0		Madras .....	42	0	.. 0 0	43	0	.. 44 0	
Spearmint .....	4	0	.. 16 0	4	0	.. 16 0		PALM, fine .....	39	0	.. 39 10	38	10	.. 0 0	
Thyme.....	1	10	.. 2 0	1	10	.. 2 0		LINSEED .....	33	0	.. 23 5	31	0	.. 0 0	
Mace, expressed .. per oz.	0	1 1/2	.. 0 3	0	1 1/2	.. 0 3		RAPESEED, English, pale ..	44	0	.. 0 0	48	0	.. 48 10	
OPUM, Turkey.....per lb.	17	0	.. 19 0	27	0	.. 29 0		brown.....	42	9	.. 0 0	46	0	.. 0 0	
inferior .....	11	0	.. 16 0	15	0	.. 25 0		Foreign pale.....	45	0	.. 0 0	50	0	.. 50 10	
QUASSIA (bitter wood) per ton	80	0	.. 32 6	60	0	.. 70 0		brown.....	0	0	.. 0 0	46	10	.. 0 0	
RHUBARB, China, good and								COTTONSEED .....	33	10	.. 0 0	28	0	.. 24 0	
fine .....	2	3	.. 6 0	2	6	.. 6 0		LARD.....	50	0	.. 53 0	68	0	.. 72 0	
Good, mid. to ord. ..	0	5	.. 2 0	0	4	.. 2 3		TALLOW .....	35	0	.. 0 0	35	0	.. 0 0	
Dutch trimmed ..	0	0	.. 0 0	0	0	.. 0 0		TURPENTINE, American, cks.	54	0	.. 0 0	36	9	.. 37 0	
Russian .....	0	0	.. 0 0	0	0	.. 0 0		PETROLEUM, Crude .....	0	0	.. 0 0	0	0	.. 0 0	
ROOTS—Calumba.....per cwt.	23	0	.. 40 0	27	0	.. 42 0		s. d.	s. d.		s. d.	s. d.			
China .....	24	0	.. 26 0	20	0	.. 25 0		refined, per gall.	1	6	.. 1 6 1/2	1	6	.. 1 0	
Galangal .....	17	0	.. 18 0	15	0	.. 0 0		Spirit ..	0	11	.. 0 0	1	0	.. 1 0	
Gentian .....	19	6	.. 0 0	23	0	.. 0 0		SEEDS.							
Hellebore .....	30	0	.. 35 0	22	0	.. 30 0		CANARY.....per qr.	52	0	.. 53 0	48	0	.. 60 0	
Orris .....	65	0	.. 75 0	61	0	.. 62 0		CARAWAY, English per cwt.	0	0	.. 0 0	40	0	.. 45 0	
Pellitory .....	00	8	.. 63 0	58	0	.. 60 0		German, &c.....	32	6	.. 35 0	25	0	.. 32 0	
Pink.....per lb.	0	9	.. 1 3	0	7	.. 1 0		CORIANDE.....	0	0	.. 0 0	0	0	.. 0 0	
Rhatany .....	0	4	.. 0 11	0	5	.. 0 10		HEMP .....	40	0	.. 44 0	44	0	.. 48 0	
Seneca.....	5	0	.. 5 2	4	6	.. 5 0		LINSEED, English per qr.....	0	0	.. 0 0	0	0	.. 0 0	
Snake .....	1	5	.. 1 6	1	0	.. 0 0		Black Sea & Azof ..	60	0	.. 61 0	59	0	.. 60 0	
SAFFRON, Spanish ..	35	0	.. 44 0	33	0	.. 40 0		Calcutta ..	62	6	.. 0 0	60	6	.. 61 0	
SALEP .....	170	0	.. 200 0	110	0	.. 0 0		Bombay ..	63	3	.. 63 6	61	6	.. 62 0	
SARSAPARILLA, Lima per lb.	0	8	.. 0 11	0	6	.. 0 7 1/2		St. Petersburg ..	60	0	.. 0 0	56	0	.. 57 0	
Parz .....	1	0	.. 1 3	1	0	.. 1 3		Mustard, brown.....per bshl.	0	0	.. 0 0	0	0	.. 0 0	
Honduras .....	1	2	.. 1 8	1	1	.. 1 8		white.....	8	0	.. 9 6	9	0	.. 9 0	
Jamaica .....	1	7	.. 2 11	1	7	.. 3 2		POPPY, East India per qr.	64	0	.. 65 0	59	0	.. 0 0	
SASSAFRAS .....	0	0	.. 0 0	0	0	.. 0 0		SPICES.							
SCAMMONY, Virgin ..	26	0	.. 32 0	25	0	.. 29 0		CASSIA LIGNEA ....per cwt.	164	0	.. 118 0	98	0	.. 112 0	
second & ordinary ..	10	0	.. 25 0	10	0	.. 23 0		Vera .....	42	0	.. 92 0	45	0	.. 80 0	
SENNA, Bombay .....	0	3	.. 0 5 1/2	0	3 1/2	.. 0 5 1/2		Buds .....	180	0	.. 140 0	150	0	.. 180 0	
Tinnivelly .....	0	2 1/2	.. 1 4	0	3	.. 1 6		CINNAMON, Ceylon,							
Alexandria.....	0	3 1/2	.. 1 7	0	4	.. 1 7		1st quality ....per lb.	2	7	.. 3 8	2	0	.. 3 0	
SPERMACEI, refined..	1	6	.. 1 7	1	6	.. 1 7		2nd do. ....	1	11	.. 3 5	1	6	.. 3 0	
American .....	1	3	.. 1 4	1	4	.. 0 0		3rd do. ....	1	9	.. 2 11	1	7	.. 3 0	
SQUILL.....	0	1 1/2	.. 0 2	0	1	.. 0 2		Tellicherry .....	2	7	.. 3 2	2	8	.. 2 10	
GUMS.								CLOVES, Penang.....	1	3	.. 1 4	1	1	.. 1 0	
AMMONIAC drop .. per cwt.	90	0	.. 165 0	80	0	.. 100 0		Amboyna.....	0	4 1/2	.. 0 10 1/2	0	4 1/2	.. 0 0	
lump ..	55	0	.. 80 0	50	0	.. 75 0		Zanzibar .....	0	4	.. 0 4 1/2	0	3	.. 0 0	
ANIMI, fine washed ..	300	0	.. 345 0	260	0	.. 320 0		GINOER, Jam., fine per cwt.	90	0	.. 180 0	80	0	.. 180 0	
hold scraped ..	230	0	.. 290 0	200	0	.. 260 0		Ord. to good ..	47	0	.. 87 0	33	0	.. 77 0	
sorts .....	160	0	.. 260 0	100	0	.. 200 0		African .....	37	0	.. 0 0	31	0	.. 0 0	
dark .....	100	0	.. 150 0	75	0	.. 100 0		Bengal .....	35	0	.. 0 0	26	0	.. 0 0	
ARABIC, E. I., fine								Malabar .....	35	0	.. 0 0	28	6	.. 26 0	
pale picked ..	71	0	.. 76 6	62	0	.. 70 0		Cochin .....	50	0	.. 110 0	34	0	.. 105 0	
srts, gd. to fin ..	60	0	.. 70 0	52	0	.. 61 0		PEPPER, Blk, Malabar, per lb.	0	6 1/2	.. 0 7	0	6	.. 0 0	
garblings ..	23	0	.. 42 0	25	0	.. 45 0		Singapore .....	0	6 1/2	.. 0 6 1/2	0	6 1/2	.. 0 0	
TURKEY, pick. gd to fin.	160	0	.. 200 0	160	0	.. 200 0		White, Tellicherry ..	0	0	.. 0 0	0	9 1/2	.. 1 0	
second & inf. ....	85	0	.. 150 0	85	0	.. 155 0		Cayenne .....	1	7	.. 1 9	0	8 1/2	.. 1 0	
in sorts ..	65	0	.. 80 0	70	0	.. 90 0		MACE, 1st quality .. per lb.	4	2	.. 4 7	3	3	.. 3 1	
Gedda.....	39	0	.. 42 0	33	0	.. 44 0		2nd and inferior ..	3	8	.. 4 1	2	5	.. 3 0	
BARBARY, white ..	0	0	.. 0 0	05	0	.. 70 0		NUTMEGS, 73 to 60 to lb.	3	5 1/2	.. 4 2	2	8	.. 4 0	
brown ..	44	0	.. 47 0	55	0	.. 57 6		90 to 80 ..	3	4	.. 3 5	2	4	.. 2 0	
AUSTRALIAN .....	25	0	.. 45 0	18	0	.. 40 0		132 to 95 ..	3	0	.. 3 4	1	8	.. 2 0	
ASSAFETIDA, com. to gd	30	0	.. 103 0	30	0	.. 90 0		VARIOUS PRODUCTS.							
BENJAMIN, 1st qual. ....	130	0	.. 500 0	160	0	.. 400 0		COCHINEAL—							
2nd ..	150	0	.. 210 0	140	0	.. 210 0		Honduras, black .. per lb.	2	7	.. 3 6	2	6	.. 3 0	
3rd ..	50	0	.. 85 0	40	0	.. 85 0		" silver ..	2	7	.. 2 9	2	5	.. 2 0	
COPAL, Angola red ..	130	0	.. 137 6	135	0	.. 140 0		" paste ..	2	5	.. 2 6	1	10	.. 2 0	
Benguela ..	160	0	.. 112 6	130	0	.. 135 0		Mexican, black .....	2	8	.. 2 9	2	5	.. 2 0	
Sierra Leone.....per lb.	0	3 1													







